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BY

SIR THOMAS HORDER, M.D., F.R.C.P.,

PHYSICIAN WITH CHARGE OF OUT-PATIENTS AT ST. BARTHOLOMEW'S HOSPITAL.

QUESTIONS of preventive medicine are very much to the fore just now, and the country has been stimulated to all kinds of expectations by the formation of a Ministry of Health, by the appointment of a consultative council, and by the wide circulation and advertisement of attractive memoranda upon the need for further measures of a preventive kind in regard to national health. In connexion with preventive treatment the difficult problem of influenza takes a prominent place, partly from the memory of the recent epidemic, with its heavy mortality and still heavier resulting disability, partly from fear of the next epidemic, whenever this may chance to come. What preventive measures can we adopt to ward off the disease or to check its spread and its severity if it appears?

The question falls for consideration under four headings: (1) The prevention of epidemics. (2) Prophylaxis as it concerns the community. (3) Prophylaxis as it concerns the individual; and (4) The control of the epidemic when it arrives.

I. PREVENTION OF EPIDEMICS.

I have scarcely anything to say on this point. The science of epidemiology is even less exact than medicine itself. Some say it is not a true science at all, but only a hybrid science, a combination of bacteriology, statistics, and history. Others say that, given proper study and research, it is capable of great expansion of knowledge, the value of which is at present lost to us. Be this as it may, we are to-day so much in the dark concerning the factors which determine epidemics of disease, and especially the factors which determine epidemics of influenza, that this branch of medicine is almost barren of results of a practical kind. What are the causes of the enhancement of the virulence of pathogenic micro-organisms? What are the causes of a rise or of a fall in susceptibility to infection? On these matters we have next to no knowledge, and without it we can scarcely hope to put up a barrage against an epidemic wave of incidence of influenza.

II. PROPHYLAXIS IN REGARD TO THE COMMUNITY.

What can be done to lower the susceptibility of the nation to infection by the influenza virus?

It is usually held that the maintenance of a high standard of general health in the country is a safeguard against an epidemic of disease appearing amongst us and against its making headway if it should appear. During the last epidemic of influenza a good deal was said as to the possible influence of war conditions upon the incidence of the disease. Some went so far as to suppose that the epidemic owed its existence largely to these conditions, and that it was of the nature of a pestilence which came in the wake of the war.

But there is little or no evidence in support of any such supposition. On the contrary, there are several facts that together make a strong case against this view. If the food restrictions, the nerve strain, the fuel shortage, the exposure and the fatigue consequent upon the war, exercised so debilitating an effect upon the health of the community that there resulted a rise in the susceptibility to infection, then we should expect a rise to have occurred in the incidence of sickness generally during the few months prior to the influenza outbreak. But there was no such rise.[1] Then, again, the maximum morbidity, and the maximum mortality, fell, as we all know, upon young adults and adults, the very class best able to stand these adverse conditions, and not upon children and the elderly, the two classes known to suffer most from them. Moreover, by March of this year food had improved considerably, both in quality and in quantity, and fuel was not so scarce nor so necessary, and yet there appeared the second big wave of the epidemic.

Two other interesting facts may be recalled in connexion with the point I am discussing. One of the centres from which the epidemic originally spread was Spain, a neutral country, where adverse economic conditions certainly did not obtain more than elsewhere. In Switzerland, where food and fuel were not so scarce, the mortality from the disease was higher than in Germany, where they were much scarcer.[2] Lastly, no adverse economic conditions preceded the 1889–91 epidemic in this country.

I do not, therefore, think it can be held that, even if we succeed in converting a country of C 3 citizens into one the great majority of whose members would pass the medical boards as A 1 individuals, we should thereby protect ourselves against influenza and its ravages. Some micro-organisms are prone to attack and to infect persons of low general resistance: tubercle and the more chronic pyogenetic infections are examples of this. But in another group of micro-organisms infection depends much more upon the virulence of their elements than upon the resistance of the host; the influenza virus certainly belongs to this group. As a barrier against the first class of micro-organisms there is no doubt that to keep the general standard of health at a high level is the best form of prevention: to provide air, light, exercise, rest and good food—in short, so to arrange matters that this country, in the words of the Premier, is made "a place for heroes to live in," constitutes the best defence against attack. But for defence against infecting agents of the latter class we seem to need a much more specific means of prevention.

III. PROPHYLAXIS IN REGARD TO THE INDIVIDUAL.

What can the individual do, or what can be done to and for him, in this matter?

To keep himself fit is, on general grounds, a sound piece of advice, but this does not really touch the root of the matter, any more than keeping the whole community fit is likely to ward off an epidemic. If the individual is fit, no doubt that helps him if he gets infected, but there are no facts justifying the assertion that if he is fit he thereby avoids infection. Influenza attacks the weakly and the strong, as the rain falls upon the evil and upon the good. Indeed, since to be weakly carries with it some protection against normal routine and the conditions of life leading to contact with infected persons, the robust individual is often more open to infection than his weakly brother. No doubt this factor came into play in connexion with the age-morbidity and the age-mortality of the disease as seen in the last epidemic, when the war intensified this disproportionate exposure to infection between the able-bodied and the weak. In the face of considerations like these it is difficult to see what else than some method of specific immunization can really solve the problem.

This brings us at once to the biggest gap of all in our knowledge of the disease: we are still without any certainty as to the essential causative agent in influenza. That it is a single agent, even, is not clear, though the argument is strongly presumptive in favour of the view that it is. But whether this agent is Pfeiffer's bacillus, or some other microbe as yet not isolated—possibly a member of the "ultra-microscopic" group—we cannot say. We are even farther away from exact knowledge on the point than we thought we were eighteen months ago. We entered upon the epidemic with more confidence that we knew the causative agent than we had when we emerged from it. This was partly because the clinical picture of the disease made us doubtful, and partly because bacteriological evidence failed of complete demonstration, and this with abundant material to work upon and greatly improved technique since the epidemic of thirty years ago. The most carefully devised and thoroughly undertaken experiments with Pfeiffer's bacillus have failed to produce the disease in human beings, even when the bacilli have been quite freshly isolated and sprayed in enormous quantities into the nose, eyes, and throats of volunteers. Virus taken directly from influenza patients, sprayed in similar fashion, has failed also. Nor has it been possible to get healthy individuals to filter off Pfeiffer's bacillus from influenza patients placed in close contact with them, coughing and breathing freely within two inches of the

mouths of the volunteers.[3] Negative results teach us nothing of positive value, it is true, but, in view of such experiments as these, and many more facts throwing doubt upon the claims made for this microbe, it seems clear that we must consider the nature of the exact causative agent as not yet established.

Of the secondary invading micro-organisms we know a great deal, and this knowledge is of considerable value, but until we are clear as to the cause of the primary infection we are not likely to advance very far on the lines of specific immunization. It does not, however, follow that we must necessarily wait for this knowledge; the earliest of all our methods of immunization against infectious diseases—I refer, of course, to small-pox—warns us against this; for even now we do not know the essential nature of the small-pox virus. And yet, as the result of vaccination, small-pox has become, in this country, a curiosity rather than a dread.

The gist of it all is that we require more and more work done upon the etiology of influenza and more and more investigation into the essential cause. The onus in this matter does not lie with the practitioner, but with the responsible Government of the country. I do not mean that we practitioners need not keep alert and observant—we must not forget that Jenner was a practitioner—for such an attitude is of the utmost importance; by preserving it we may give a valuable lead to the laboratory worker and to the research organizer in the field. But it is essential that the stimulus given to medical research by the exigencies of the war should not die down in this country, as seems not unlikely to happen. There is stigma enough in the reflection that it required a world war, and a bitter struggle for our very existence, to drive us into a belated investigation of the causes of disease and the means of preventing and of curing them. There will be national disgrace if peace finds us sinking again into somnolence or, what is much the same, into bureaucratic self-satisfaction. Let economy be practised by all means, and let the Government preach retrenchment, but money spent upon the national health is the soundest investment the country has ever made, and to sell out this particular stock is the height of folly.

In the present state of our knowledge the available materials for preventive inoculation "against influenza" are not very convincing in regard to their specific value. And yet, when I am asked my advice on the matter, I generally favour the use of a prophylactic vaccine, not because I think it is a specific preventive—like typhoid vaccine in typhoid fever, for example—but because there is some reason for considering that a certain degree of protection is conferred against serious grades of catarrh and secondary infections, and because the more of such experiments there are carried out with care and with proper records the better for the advance of our knowledge. Preventive inoculation of single individuals, whatever results, teaches us little or nothing, but similar treatment of collections of individuals in schools, in other institutions, in the navy and in the army, may teach us a great deal. In this matter the Ministry of Health should provide ways and means—for this also is research, and of a very valuable kind. Large stocks of vaccine, of known and approved content, should be at the disposal of the medical officers of health, who should co-operate with medical officers in charge of various institutions and should be responsible for collating the results. "More work for the medical officers of health," it will be said. Certainly; I should like to see medical officers of health so busy with work of this and similar kinds that they had no time for private practice at all. They should invariably be whole-time men, and they should be paid salaries consistent with their training, their expert knowledge, and the great responsibility attaching to their office. At present some medical officers of health are paid about a third the salary which a town council pays its clerk, who has a staff to do his work, is pensioned when he retires, and has in many instances received no special nor expensive education to qualify him for his post. Until national health comes to be considered of as much value as paving the streets and running the tramways these anomalies will continue to exist. The health of the country never has been regarded as an asset of much value, and for this reason the money invested in it has never been adequate to its real needs.

IV. What can be done to Control the Epidemic when it has Arrived?

I will take the question of public control first. Isolation of the patient, promptly and thoroughly undertaken, is, of course, the essential thing. Here we have a branch of preventive medicine which can be exploited straightway, without waiting for the results of research into causes. During the war it was not practicable to carry out even the first principles of isolation. Hospitals were already full of wounded and sick soldiers; movements to and fro of large bodies of men were inevitable; transports arrived with men in all stages of the disease and of convalescence; more and more virulent strains of the virus were being continually imported; doctors and nurses were very scarce, and those that were available were grossly overworked. The conditions for *spread* of the epidemic were, in fact, very good, and for its *control* very bad.

No doubt grievous blunders occurred, and much thoroughly bad organization took place here and there; most of us could write about these things if we wished to emulate certain admirals and generals. We are either too discreet or too busy to do so, and since the sailors have forfeited their right to the title, we might claim it for ourselves, and be designated "the silent profession." We may reasonably hope that these handicaps imposed by the war will not be repeated for some time. But we need positive aids, in addition to a guarantee against negative handicaps.

1. Quarantine at the ports, we presume, has already returned to its efficient pre-war state.

2. Early diagnosis and notification, however difficult the problem raised, are matters in which we can all give important help whilst in the daily pursuit of our own practice. The careful observation and recording of the sporadic cases, which may link up the epidemics in a manner not yet made clear, must be a valuable aid to the student of the epidemiological factors.

3. But I have no doubt that the greatest of all our checks to the spread of an epidemic would be a proper system of hospitalization, adequate to the peculiar features presented by the disease. It is hoped that one of the earliest pieces of work undertaken by the new Ministry of Health will be in this direction. A thorough scheme should at once be drafted, by which several large hospital units are established up and down the country for prompt mobilization in times of epidemic emergency. Each unit should have its base, consisting of a well-chosen set of buildings—a fever hospital, a large block of schools, or an infirmary—its staff of doctors, bacteriologists and nurses, its laboratory, and its dispensary. In this matter the lessons of the war should be utilized for the exigencies of peace. And a great deal of useful experience in regard to base hospitals is already fresh in mind, and in potential organization. It would be possible to mobilize these units one by one as required by the incidence of the disease, and have them running smoothly with a few days of their requirement. The staff would be a whole-time staff during the active service of the unit, and demobilization would take place so soon as the epidemic subsided. The expenses of these hospital units would be covered by a special grant made to the Ministry for the purpose. Some of the units might be incorporated with the present large general hospitals, which would set aside a number of wards for the cases and allot them temporarily to a certain number of the staff and of the nurses for treatment. Some of the units might have their base in "special" hospitals, whose usual cases could for the time be pooled with others in "special" hospitals of the same kind. Transport arrangements could be systematically undertaken by the St. John Ambulance.

The efficiency and the success of such a method of public control of an epidemic would turn almost entirely upon the thoroughness with which the schemes were organized beforehand. The analogy between warfare and medicine is hackneyed, but it is very apt. Just as we were caught almost wholly unprepared by Germany when war broke out in August, 1914, so we were caught almost wholly unprepared when the epidemic of 1918 came upon us. Why not learn the lesson and start at once an organized system of defence and of offence against the next outbreak, be it influenza, or cerebro-spinal fever, or whatever it be? Mobility was shown during the war to be the most valuable feature that an army could possess—the

power of rapid concentration upon an objective. This is so in preventive medicine; I believe it to be so in curative medicine also—promptness in collecting all available therapeutic means and bringing them quickly into action. But in order to get this mobility in times of stress in public health the whole territorial scheme, as it were, must be already in potential, and available for calling up at the shortest notice.

I suggest that one or two, or more if needs be, of these establishments that I have outlined should remain in commission between the epidemics, so as to be available for special study and treatment of sporadic cases. They could be staffed by men who—recently demobilized but perhaps looking for suitable work under the Ministry—have had recent and quite exceptional experience in the influenza epidemic. In the matter of research we hear that the highly expert men working during the war and immediately following it under the auspices of the Medical Research Committee are being disbanded. This cannot be for lack of subjects requiring research; is it for purposes of economy? Is it credible that the nation desires the Government to save a few thousands of pounds in this direction?

Efficient isolation of the infected patient is not the only benefit that would accrue from such a scheme of hospitalization. Segregation of the cases might also be attempted, either on clinical or bacteriological lines, or on both. In a large hospital of several wards an effort along this line might lead to results quite unanticipated. A little was attempted in this way by the American Medical Service in France during the war.[4] Our enterprising allies separated groups of cases according to the dominant micro-organism found in the sputa on admission; this can quite often be done rapidly by examination of stained films. "Pfeiffer cases" might be put into one ward, "pneumococcus cases" into another, and "streptococcus cases" into a third. It will readily be seen what large possibilities there are in work like this, but also how impracticable it is to attempt it unless efficient hospital methods are organized before an epidemic arrives.

Evidence has recently been brought forward suggesting that a practical method of control in the future may depend upon rendering the room atmosphere bactericidal by certain fumes, such as NO_2 and SO_2 gases.[5] These gases appear to be inimical to the influenza virus, or to the bacteria which invade the mucosa of the influenza patient and lead to secondary infections, adding greatly to the mortality of the disease. By the employment of gases in this way, rather than steam or chemicalized aqueous vapour, a much greater number of patients could be treated together. But such treatment would, again, demand proper methods of hospitalization.

Lastly, consider the great value of such a scheme of isolation and segregation hospitals in the scientific trial of vaccines or other form of immune therapy. At present we have a huge mass of individual experiences to guide us, or rather to confuse us, and as yet scarcely any scientific data. This is, of course, largely due to the handicaps under which observers were working during the last epidemic. Until the claims of various enthusiastic immunizators are subjected to rigid controls we cannot even express a considered judgement on the subject of inoculation treatment of influenza. Impressions we may have, and there are always common-sense and general principles to guide us through the babel of advice, but a sound position on the matter cannot be established until the work is done with proper observation and control by unprejudiced men.

It must strike the intelligent part of the public as a glaring confession of our ignorance on the matter that some of us are wildly enthusiastic, some are coldly temperate, and some of us entirely negligent, when the question of inoculation treatment is mooted. The very formulae recommended differ enormously, both in the nature of the ingredients, in their proportionate composition, and in the dosage advocated. Indeed, these things are even more variable in the formulae proposed for treatment than they are in the formulae proposed for prophylaxis. The matter is not rendered more simple, but a great deal less so, by the enterprise of the wholesale chemists, from whom no more pure science must be expected than is necessary to convince the practitioner that the remedy so alluringly offered is not a quack one.

It may very well be that both the success and the failure of vaccines in the treatment of influenza are due to the great differences known to exist in the infecting flora in different cases. The ideal vaccine—if vaccine be the type of specific remedy we shall ultimately rely upon—must of necessity be autogenous in these cases of mixed infection; but an autogenous vaccine for each patient is quite impracticable during an epidemic of a fulminating disease. "Group" vaccines would, however, be quite practicable, but to use them properly would require segregation of the cases along the lines already suggested, in fact would demand, once more, an adequate scheme of hospitalization.

Some other suggestions for control of an epidemic may be briefly mentioned, such as the closing of places of public amusement and of worship, the disinfection of railway carriages and other public vehicles, and the wearing of masks. In these things all the advantage does not lie entirely on the side of the precaution. The more interruption that is attempted in the normal routine of public life, the more fear is engendered, and to engender fear is to breed panic. Forbidding public amusements, as has been pointed out, may drive a good many people into worse atmospheres in their own homes. Moreover, there is a limit to what is economically practicable in these things.

I come lastly to the question of control of an epidemic as it is affected by treatment of the individual case, and my remarks will apply equally to the sporadic as to the epidemic case. The check to an epidemic does not depend only upon hospitalization of infected patients; it depends also upon efficient management of the individual case. Even with a number of hospital units, such as I have outlined, quickly established and thoroughly run, there must needs be during an epidemic many thousands of cases treated in their own homes. The existence, too, of large numbers of mild cases of short duration puts a very definite limit upon institutional treatment. I have laid it down as an axiom elsewhere that every case of influenza treated promptly, and treated thoroughly, is a contribution to preventive medicine. In the homes of the well-to-do there can be no excuse for the neglect of measures of known value in treatment, and especially for ample ventilation. And yet how frequently did we see the patient in a stuffy little room, the bed placed hard against a wall, much of the available air space occupied by furniture and bric-à-brac, other and much larger rooms being left unoccupied. And even in the houses of the poor we can do much by explaining the fundamental principles of aëration of the sick-room, the control of body heat, and the choice of food. When I once wrote about the special bearing of these principles upon the treatment of influenza patients[6] I was told that what was possible in large houses was not possible in small ones, and that in many instances the overworked doctor had time only to call for a few minutes, give a word of encouragement to the patient, and leave a prescription or some medicine. To which I would reply that if the work is so pressing that something has to be omitted, I should omit the medicine and open the window. The word of cheer I should on no account omit—it can be put in whilst the window is being opened—but I should remove the superfluous blankets and rugs under which the patient is stewing, explaining as I did so the why and wherefore to the anxious relative, who is often very willing to help if only she knows how.

In the treatment of the actual case I regard the most important thing by far to be a free current of fresh air. It has not only the most important therapeutic value for the patient, it is also of great value as a preventive against spread of the infection. Winds appear to "break up" an epidemic wave; a current of fresh air, it seems quite certain, is our most potent means of defence in the case of the individual patient. I believe that no small factor in the spread of the recent epidemic were the light restrictions in many areas, including London, for these entailed the closing of windows or, if not this, the use of heavy blinds and curtains which rendered open windows ineffective.

Of the various drugs recommended by the public and the press as preventives in time of epidemics there is little to say, except, perhaps, that the taking of them has a certain psychic value. I do not think either quinine or cinnamon internally, or eucalyptus as a vapour, maintained, during the more severe trials of 1918 and 1919,

the prestige gained for them in 1889. Of the nasal douche and gargle advocated in the Local Government Board memorandum I cannot speak more confidently than of drugs and lozenges. The trouble about all these local measures is that the very people who are most liable to infection are much too busy and too preoccupied to carry out a mucous membrane drill with any regularity.

CONCLUSION.

In conclusion, we must, I fear, confess to a very unsatisfactory position at present in regard to preventive measures in the treatment of influenza. But to know how little we know is an essential step in progress. The great need is organized research and organized hospitalization, and now is the time for these things to be carried out. Let us not cease to urge upon those responsible for the public health the importance of the problem and the great uncertainty of our present knowledge, reminding them that economy here is of the falsest, and that the country possesses no asset to be compared in value with the health of its citizens.

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NORMAL AND MORBID CONDITIONS OF THE TESTES FROM BIRTH TO OLD AGE IN ONE HUNDRED ASYLUM AND HOSPITAL CASES.

BY

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(*Continued from p. 659.*)

CORRELATION OF BIOCHEMICAL AND MORPHOLOGICAL CONDITIONS OF SPERMATOGENESIS.

IT has been shown that sections of the testis of a newborn child exhibit lipoid granules in the interstitial cells, also lipochrome granules similar in appearance to lutein. Fine lipoid granules are also seen in and between the embryonic epithelial cells of the seminiferous tubules. Sections of the testis of a four months infant show that the seminiferous tubes are about twice the size of those at birth; no lipoid granules are seen in the interstitial tissue. The appearances of sections of the testis of a boy aged 11 show almost similar appearances to those at four months; the tubes are not much larger. A few of the tubules show cells with mitotic figures and cells of Sertoli can be seen, but they contain no lipoid granules.

Not until puberty and active spermatogenesis has commenced are lipoid granules found in the interstitial tissue. Usually large droplets of ruby-red-stained fat are seen aggregated together in this tissue. Fine orange-stained granules can be seen in abundance in the interstitial cells of Leydig, in the spermatogonia, and especially filling the cells of Sertoli. The large droplets are probably lipoid, with a greater proportion of unsaturated fatty acid.

The fact that the lipoid ceased to appear in the interstitial cells as soon as, and as long as, spermatic cell growth ceased and reappeared with active spermatic cell proliferation, may be regarded as very suggestive evidence of the phosphorized lipoid being connected with nuclear proliferation.

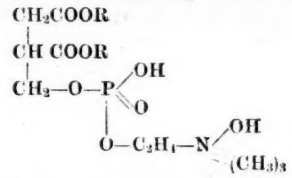
This conclusion, moreover, is supported by the fact that in advanced regressive atrophy the fine orange-stained lipoid granules have almost entirely disappeared from the interstitial tissue.

The cells of Sertoli may in some cases of advanced atrophy still contain lipoid. Only large ruby-red droplets of varying size are usually seen in the very atrophied tubules, which may be explained by a fatty degeneration of the cells.

THE CORRELATION OF BIOCHEMICAL PROCESSES WITH THE HISTOLOGICAL APPEARANCES.

1. In films of seminal fluid from the vesiculae seminales and sections of the testis stained with a basic and acid dye, such as haematoxylin and eosin, Giemsa or Leishman stains, the following microchemical reactions are observed. The head of the normal spermatozoon, consisting of nucleinate, is stained blue by the basic dye. The tail, except the axial thread, stains pink—that is, the lipoid which forms the main constituent of the tail is stained pink.

2. In frozen sections of formalin-hardened testes stained with scarlet dye and haematoxylin, and mounted in Farrant's solution to show the distribution of the lipoid granules, the following appearances can be observed. The spermatids in the process of development into spermatozoa are stained posteriorly by the scarlet dye and anteriorly by the basic dye. The fine orange lipoid granules are seen in the spermatogonia, spermatocytes, and especially in the cells of Sertoli. The lance-shaped heads of the spermatozoa stained blue are seen diving into the cells of Sertoli, where it may be presumed they behave like living organisms and feed upon the store of lipoid in these "nurse" cells. In situations where sheaves of spermatozoa have attained further development and projected their tails into the lumen of the tube prior to escape as free organisms there is a paucity of fine orange granules observable in the Sertoli cells. Chemical investigations by Miescher and Kossel have shown that the tails consist almost entirely of lecithin and cholesterol with a small amount of protein. Lecithin represented by the formula—



may be looked upon as glycero-phosphoric acid combined with choline, a base with the constitution of a tertiary amine, and with two molecules of fatty acids (Koch, 1902).

From the following considerations it appears probable that the phosphorus of the glycero-phosphoric acid enters into the formation of the nuclein, a fatty acid being formed which combines with the lecithin continually taken up from the blood and lymph. The presence of the unsaturated fatty acid with the lecithin favours the oxidation processes necessary for the active metabolic processes connected with the cell proliferation (Thunberg, 1909, 1913; Warburg, 1913; and Warburg Myerhof, 1913).

The "iodine value" indicating the degree of desaturation of fatty acids of lecithins obtained from various organs shows a high figure for lecithin from testicles—117—as compared with 72 for lecithin from ox heart, 81 from liver, and 69 from thyroid (Cruickshank, 1914).

Miescher's experiments show that the tails of the spermatozoa consist largely of a phosphorized fat and some cholesterin, therefore I examined frozen sections of the testicles for cholesterin by Liebermann's test.

The sections were taken out of water, floated on to a slide, a covering glass placed over the section and glacial acetic acid was attracted under the covering glass by the application of filter paper to the edge; a drop of sulphuric acid was next drawn under the covering glass.

The granules in the interstitial substance and in the circumference of the tubules became pink, and finally turned to green when examined with a magnification of 100. When the magnification was increased to 500 or 600 the fine granules in the spermatic cells, especially the Sertoli cells, were seen to be stained green, also the spermatids and heads of the spermatozoa, which leads me to believe that these active developing cellular organisms have a thin covering membrane containing cholesterol. Seeing that cholesterol is insoluble in cold alcohol, and yet this reagent dissolves out nearly all the substances stainable by the scarlet dye, it follows that the cholesterol, although it has exactly the same distribution as the lipoid which is stained by this dye, must only represent a fraction of the lipoid in which it is in combination.

We know that cholesterol with lecithin enters into the formation of cell membranes. There is good reason, therefore, to suppose that the abundance of lipoid found in the

cells of Sertoli during active spermatogenesis may be utilized for forming the tails and covering membrane of the head of the spermatozoa, but the question arises, Is this lipoid substance a phosphorized lipoid and can its phosphorus be utilized in the manufacture of nucleinic acid, the principal constituent of the heads? Wherever there is active cell proliferation there is abundance of peroxidase granules—that is, peroxidase ferments may be contained in these fine lipoid granules found especially in the syncytial cells.

THE BIOCHEMISTRY OF THE SEXUAL ORGANS.

A full account of our knowledge of the biochemistry of the sexual organs is given in the admirable work of Marshall, *The Physiology of the Reproductive Organs*, and I shall only briefly summarize the subject in so far as it helps in the arguments relating to the results of my own researches upon spermatogenesis in health and disease.

"According to Slowtzoff, human semen consists roughly of 90 per cent. of water and 10 per cent. solids, which upon incineration yield 1 per cent. of ash." The solids contain 2.3 per cent. proteins. "In the ash K, Na, Ca, Mg, P, Fe, and S have been found. The quantitative analysis of the ash reveals a remarkably large amount of calcium and phosphoric acid—namely, about 20 per cent. Ca and 30 per cent. P_2O_5."

The chemistry of spermatogenesis was first investigated by Miescher, who correlated histological examination of the milts of Rhine salmon with chemical analysis. His histological observations enabled him to separate in bulk the portion of the milt containing the heads from that of the tails. He showed that the chemical composition of the former differed essentially from the latter. Miescher found that the heads consisted chemically of two substances—a highly nitrogenized substance which he termed "salmin," and a highly phosphorized substance, nucleic acid. The two are in chemical combination and form a nucleinate.

Kossel continued the researches of Miescher, and showed that the heads of the spermatozoa of other species of fish consisted of a combination of these two substances—namely, a protamine which is specific for each fish and nucleic acid which is common to all vertebrates. It was also shown by these investigators that the tails of the spermatozoa consisted of protein, a large amount of phosphorized lipoid, and cholesterol in smaller amount.

During the breeding season the salmon takes no food, but feeds on its muscles. The protamine comes from the muscle. It was shown that the blood of the fish during the breeding season contained a large amount of phosphorized lipoid, which therefore, in all probability, is utilized in spermatogenesis. This lipoid must have come from the muscle or from metabolic processes incidental to the wasting of the muscles.

The researches of Loeb show that the iron of the nucleus of a cell acts as a catalyser, in the presence of oxidase, converting molecular into atomic oxygen—not only may complex substances be split up into simpler substances, but simple substances may be synthetized into complex substances thereby.

The first step in all proliferation is the taking up of the raw material for growth by the living cell; it is brought to the gland by the blood and lymph channels.

Our previous remarks show that certain elements are especially required—namely, Ca, N, P, Fe. In all active proliferating cells there is oxidase ferment in the form of fine granules, and these, under the influence of the iron catalase in the nucleus, are able to convert the molecular oxygen into atomic oxygen, and the chemical processes which are set in action enable the cell, including its nucleus, to build up substances like unto itself from the raw material brought by the blood and lymph. The first morphological change is visible in the chromatin of the nucleus, karyokinetic figures appear heralding the division of the nucleus and the cell. It is highly probable either that the oxidase granules are lipoid substances with a certain amount of unsaturated fatty acid, or they have a lipoid film on the surface, the phosphorous having an affinity for the oxygen with which it is in unstable combination, consequently O_2 is readily converted into free atomic oxygen, O, by the catalyser iron of the nucleus.

Some experiments of Marshall carried out in 1908 suggest that these phosphorized fats may act as oxygen carriers, and that they may thus fulfil an important function in all respiration.

That phosphorized fats are in all probability the source of nucleic acid is supported by the following facts. Neither nucleo-protein nor pentoses are present in the fresh egg, and purin bases are only present in very small amounts. During development of the egg these substances rapidly increase in amount, indicating a synthesis of nucleo-proteins from the reserve material of the egg—namely, proteins and phosphorized fats.

Wolfgang Ostwald has determined the amounts of oxidizing ferments present in the testes of toads, frogs, and newts. The watery extracts of these organs had the power of decomposing hydrogen peroxide with the formation of water and oxygen, and of oxidizing guaiaconic acid to guaiacum blue, so that a blue colour appeared when these extracts were added to an emulsion of guaiac resin. These reactions indicate the presence of a catalase and of a peroxidase in the extracts of the sexual glands. Such ferments are present in many, if not all, organs and tissue fluids, but a special significance is attributed by Ostwald to their presence in the ova and spermatozoa.

MICROCHEMICAL TESTS REGARDING THE NATURE OF THESE LIPOID GRANULES.

A phosphorized lipoid—for example, lecithin—is stained an orange colour, fat or a fatty acid a deep ruby-red, by scarlet. Sections of the medulla oblongata from three cases of death by shock caused by gunshot wounds with compound comminuted fractures of the femur, with fat embolism, showed this remarkably well.

Degenerated nervous tissue, in which there is free fatty acid the result of decomposition of the phosphorized fat (myelin), is stained black by Marchi fluid (1 per cent. osmic acid in 5 per cent. potassium bichromate solution), whereas the myelin of normal nerve is stained an ash-grey. Both these microchemical reactions have been employed in this investigation. I have found that in sections of normal testicle there is invariably within the spermatogonia, cells of Sertoli, and to a much less degree the spermatocytes, an accumulation of fine granules which are stained orange or ash-grey according to the staining reaction employed. Under a low power these granules form a ring within the basement membrane of the tubes (see Figs. VI and VIII), but the interstitial staining by these methods varies very considerably as to the amount of fatty acid and phosphorized fat present in testes where active spermatogenesis is taking place. We may ask the question, Is this variability in the amount of fatty acid present in the interstitial tissue due to a decomposition of the phosphorized fat in the formation of the nucleic acid? But wherever we have this fatty reaction the cholesterol reaction is also obtained, so that it is not a simple fatty acid but a cholesterol combination. The fine orange granules of phosphorized lipoid also give this cholesterol reaction; we must therefore suppose that this substance is present in the granules found in the spermatic cells. But cholesterol is present in the tails of the spermatozoa, although in much smaller amount than lecithin; moreover, these two substances form the periplasium constituting the osmotic membrane of the spermatocytes, spermatids, and spermatozoa.

Now the oxidase reaction (in the few cases in which I have employed this test) corresponds in its distribution, both in the interstitial tissue and in the seminiferous tubes, to the scarlet, osmic, and cholesterol reactions—a fact which seems definitely to show a functional correlation between lipoid and oxidases. The following experiment supports the conclusion that these lipoid granules are connected with the oxidation processes.

Small portions of the testis of a freshly killed guinea-pig were placed in a solution of vital methylene blue. These fine granules took up the dye. The tissue was placed in saline solution and covered with a covering glass which was surrounded with vaseline. The preparation was put into the warm chamber. After some hours all the blue colour had disappeared. Upon lifting up the covering glass and admitting the air all the coloured granules reappeared. A clear proof that these granules use up and take up oxygen.

It is an interesting fact that the testes of persons dying from the most varied forms of microbial infection in which toxins must have circulated in the blood and lymph for a considerable time nevertheless show active spermatogenesis. The interstitial tissue and the tubuli seminiferi contain abundant lipoid in the same situations as in cases of sudden death by injury.

Cortex Adrenalis and the Reproductive Function.

There is evidence to show that one of the functions of the adrenal cortex, the cells of which are filled with lipoid substance, is to provide lipoid for the building up of the myelin of the developing nervous system. The evidence in favour of this is as follows:

1. A correspondence in size of the adrenal cortex and the brain in the animal series.

2. The great diminution in size of the adrenals in anencephalous monsters.

But it has other functions—namely, the storage of lipoid—which, as occasion arises, can pass into the blood and keep constant the supply of lipoid to the reproductive organs, where it constitutes the raw material for formative nuclear activity. This functional correspondence of the adrenal cortex and sexual glands is indicated by certain pathological facts—namely:

1. Adenoma of the suprarenal cortex has been found associated with marked sexual precocity.

2. Among my cases an active spermatogenesis in a man aged 69, who died after many years' residence in the asylum suffering with dementia of arrested general paralysis, was associated with a large adrenal cortex.

3. In four male cases of well-marked dementia praecox, with regressive atrophy of the testis, the adrenal cortex was narrow and the cells contained much less lipoid than in other cases of mental disease dying in the asylums. I have only paid attention to this matter lately, but it is being followed up to see if there is a correlation.

4. The cortex adrenalis in the teleostei and elasmobranch fishes is a separate gland. The medullary substance, with its chromaffin, is a part of the sympathetic nervous system.

5. Rats fed upon suprarenal gland showed hypertrophy of the testes; other organs did not show hypertrophy (Swale Vincent).

6. The cortex adrenalis is developed close to, or forms part of, the genital ridge, and in one case of dementia praecox, where there was only one testicle, the adrenal gland of one side weighed less than one-half that of the side in which the testis was present, and this difference in weight was mainly due to a diminished cortex.

I have observed in a large number of cases where the patient has died from a disease in which there has been microbial infection and consequent toxaemia a marked diminution of the amount of stainable lipoid in the adrenal cortex, and I agree with Elliot that this adrenal lipoid probably passes into the circulation to form antitoxins. Now, it is a remarkable fact that however much the lipoid may have diminished, on this account, in the adrenal cortex, it does not seem to have diminished in the testis. Possibly this may account for the fact that, in all manner of chronic microbial infections with toxaemia, active spermatogenesis may nevertheless be seen in the seminiferous tubules. This supports the premise that these lipoids form a protective barrier by virtue of the free atomic oxygen liberated upon their surface; thus affording a special provision of nature to protect the germ cells from injury, as well as providing at the same time the oxygen and raw materials necessary for the most fundamentally vital cell activity in the body.

The Oxidase Reaction Applied to the Cortex Adrenalis.—According to Marinesco, the cortex adrenalis does not give the oxidase reaction because the contents of the cells stain uniformly and not as granules, but some cells from which some of the lipoid has escaped do show granules of lipoid and these stain in a similar manner to the granules in the testicles.

(To be continued.)

SURGICAL TREATMENT OF FACIAL PARALYSIS.

BY

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EVERY large military hospital has had experience of traumatic facial paralysis, where restoration of function by nerve repair or nerve grafting has not been possible. In cases of comminution of the petrous bone end-to-end repair cannot be effected, although grafting or anastomosis may still remain practicable; in lacerated parotid wounds the main trunk has already broken up into the parotid plexus, and repair of the diverging branches does not come into the realm of practical surgery.

The deformity is a very terrible one, and any treatment that offers hope of cosmetic improvement should be welcome to surgeons.

Early in 1917 I attempted to do something for these patients by grafts from neighbouring muscles, and in successive cases to employ the method, modifying the procedure by the result of experience.

I describe the operation in the form I finally adopted (Fig. 1):

Preliminary to anaesthesia, the non-paralysed side of the face is inspected, and the position of the lower half of the naso-labial furrow marked in; a second vertical marking is made almost in the centre of the cheek in the position of the dimple that becomes evident when laughing. A third marking is made, beginning below the external canthus and taking the direction of one of the lines of the crowsfoot. The side of the head is shaved.

An incision is made through the skin in the hair line from the zygoma to the upper limit of the temporal fossa, directed slightly backwards so as to be parallel to the underlying fibres of the temporal muscle. The skin is then undermined forwards and backwards to expose the temporal fascia; two parallel incisions are then made, again from the zygoma to the limit of the temporal fossa through the fascia and muscle down to the bone; these incisions should run in the direction of the muscular fibres and should include a strip of muscle as thick as a man's thumb; it is important for the preservation of the nerve supply and for the cosmetic result that fully this bulk of muscle should be used. A smaller slip anterior to this is similarly isolated, and both are detached from the underlying bone.

An incision is now made under the eyelid in the marking representing one of the lines of the crowsfoot, the skin is undermined, the anterior smaller slip of muscle drawn through, made taut, and sutured to the fibres of the orbicularis palpebrarum with catgut (Fig. 1, T, and Fig. 3, T_1).

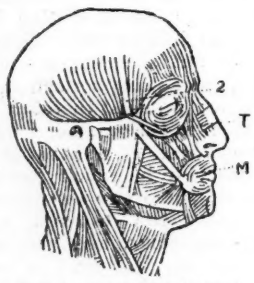

FIG. 1.—2, Denuded area in temporal fossa. T, Slip of temporal muscle inserted into orbicularis palpebrarum. M, Slip of masseter inserted into orbicularis oris.

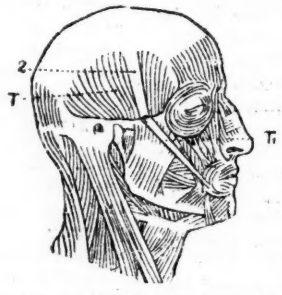

FIG. 2.—2, Denuded area in temporal fossa. T, Temporal muscle. T_1, Slip of temporal muscle inserted into orbicularis oris.

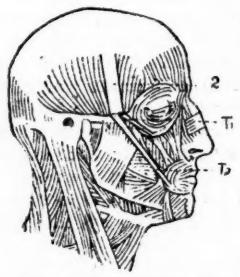

FIG. 3.—2, Denuded area in temporal fossa. T_1, Slip of temporal muscle inserted into orbicularis palpebrarum. T_2, Slip of temporal muscle inserted into orbicularis oris.

Incisions are made in the line of the cheek furrow and the lower half of the naso-labial groove, and the skin tunnelled to make a continuous passage from the temporal wound to the corner of the mouth. The large slip of muscle is then drawn down over the zygoma through the channel, sutured with catgut to the superficial fascia exposed in the cheek wound, and to the muscular fibres of the orbicularis oris below and slightly mesial to the corner of the mouth (Fig. 3, T_2).

The facial incisions are sutured with horsehair: the cut margins of the temporal muscle are brought together as far as possible with catgut (it is extremely difficult to get apposition), and the temporal wound closed with silkworm gut.

Faradism and massage should be employed early, and the patient should daily exercise his facial expression before a glass. The grafted straps of muscle will continue to function.

In the first operation of this kind which I attempted I grafted a slip of the temporal muscle into the orbicularis palpebrarum and a slip of the masseter into the orbicularis oris (Fig. 1, M); Stenson's duct was guarded by a probe inserted and tied to a tooth. Considerable difficulty was

experienced in getting the slip from the masseter, and there are no compensating advantages. I have performed the temporal muscle graft without making use of a cheek incision, but I prefer the method described, and the additional scar, lying as it does in a natural skin fold, is almost imperceptible.

The cavity left in the temporal fossa after swinging down the slip is of considerable dimensions, and to obliterate it by approximation of the cut edges of the muscle is almost impossible. I intend in the next case to implant gluteal fat.

I have had good results before in paralytic ectropion by means of the ordinary Kuhnt-Dimmer operation; I think, however, that the sling of living muscle is more likely to ensure permanent improvement than the mere shortening of the lower lid.

I have not attempted to do anything for the expressionless brow; the patients I had were instructed to refrain from raising their eyebrows and frowning, and were very successful in abandoning this expression of emotion; in a deeply wrinkled forehead where the facial expression could not be adequately controlled I should feel inclined to excise strips of skin and fascia in the line of the frontal furrows. The immediate cosmetic result of the operation is good in repose. The drooping corner of the mouth is slung up into a natural appearance by the strap of inextensible fascia and living muscle, and the hollowness of the cheek is obliterated by the bulk of the graft. It is not to be hoped that the implantation of a graft from a mandibular muscle will restore the infinite variety of facial expression commanded by the complex sheet of muscle it replaces, but an appearance of tone and life is conferred that gratifies both patient and surgeon; and by practice before a glass the patients learn in some degree to associate the contraction of the temporal slips of muscle with that of the zygomatics and the risorius of the unaffected side.

Two years ago a writer in the *Annals of Surgery* contended that the neuro-muscular spindles of a graft multiplied and extended into the fibres of the paralysed muscle, and illustrated his article by microscopic sections that seemed to prove his point. I cannot feel optimistic about the likelihood of this occurrence, but if any such process took place the cosmetic gain would be further enhanced.

Much has been learned in military surgery that is destined to be of value in civil life; cases of facial palsy will be always with us, and I believe that where nerve repair is impossible, or has failed, the operation I have described will be the recognized method of treatment. The diagrams explain themselves.

OBSTETRICS: PAST, PRESENT AND FUTURE.*

BY

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In this paper on Obstetrics, the Cinderella of the Medical Faculty, I wish to present to the society the changes which have taken place, and more especially those which are now going on—changes not so much in technical points which are more suitable for presentation at a meeting of specialists, but changes affecting the community and our profession as a whole. Those of us who were concerned with the discussions and committee meetings before the National Insurance Act was passed will remember how difficult it was to get at what the medical profession wished or at any plan upon which we could agree. Since the Act came into force I have never met any one who was satisfied with its working. Even men with a panel of 5,000 are not pleased.

At present even greater changes are looming ahead, and in obstetrics have already taken place without the bulk of the profession realizing how we are drifting. In our archives we have a most interesting record of obstetric work done in Liverpool. Henry Park was a pupil of Percivall Pott at St. Bartholomew's, and studied in Rouen; he was surgeon to the infirmary, a partner with Alanson, and was the inventor of the operation for excision of joints. His midwifery record, which we possess, extends from 1769 to 1830, and enumerates 3,900 cases extending over fifty-one years. The first 1,000 cases took fourteen years, the second thirteen, and the third twelve years. It was not until he had done 3,300 that he slackened in this work, and the last 100 cases extend over eight years. The record says nothing of mortality, but singularly few abnormal cases are noted. There were only two forceps cases, one a brow presentation; the difficulty in the other case is not recorded. There were five crotchet or craniotomy cases, four cases of placenta praevia, and only two cases of convulsions. Evidently child-bearing in those days in Liverpool was more simple than in these times.

A later record, of even more interest from the obstetric point of view, is the very detailed account left by Francis Ramsbotham of the Royal Maternity Charity from 1820 to 1850. From 1828 to 1850 in 48,996 deliveries there were 220 deaths (4.5 per 1,000), 162 were puerperal deaths, 58 non-puerperal; 66 of the former were from haemorrhage. There were only 43 cases of eclampsia (about 1 per 1,000); of these 27 were before delivery with one death, 16 after delivery with 3 deaths. Stillbirths came to 2,723, equal to 5.4 per cent.

These two records cannot be considered as typical of obstetric practice of the time, but show what could be done. Dr. Matthews Duncan, writing in 1866, took 31,277 cases occurring in the private practices of the best known obstetricians and found there were 272 deaths; he concludes that 8.2 per 1,000 might be considered the average mortality of childbirth. It was well known that hospital practice gave a much higher mortality in most instances. Duncan came to the conclusion from investigation of the returns of well managed hospitals, such as the Dublin Rotunda, that the mortality was about the same as in private cases. Florence Nightingale in 1871 said that childbirth in a hospital in London was four times more dangerous than in the towns of England, where the mortality was 5 per 1,000 births.

Death Rates in Hospitals in London, 1865–1875.

British Lying-in	...	...	19.4 per 1,000
City of London	...	...	14.3 ,, ,,
Queen Charlotte's	...	...	22.3 ,, ,,

Obstetrics has always been, as I said, the Cinderella of the Medical Faculty. It was considered a branch of the profession hardly respectable. The College of Physicians precluded practitioners of midwifery from their Fellowship; the College of Surgeons would not allow such a one to sit on its council until 1828. It was only in 1886 that an amendment of the Medical Acts required all registered practitioners to qualify in obstetrics as well as in medicine and surgery.

TABLE I.—*Mortality of Mothers per 1,000 Births Registered (England and Wales).*

Decennium.	All Causes.	Sepsis.	Accidents of Childbirth.
1851–1860	4.7	1.5	3.2
1861–1870	4.7	1.70	3.00
1871–1880	4.72	2.18	2.54
1881–1890	4.73	2.68	2.05
1891–1900	5.09	2.36	2.73
1901–1910	4.01	1.76	2.25
1911–1917	4.02	1.4	2.59

When we turn to the Registrar-General's statistics for the past fifty years we find there is little if any less risk for a woman in childbirth to-day than there was in 1851.

The fall in mortality from causes other than sepsis has extended through five decades, whereas that from sepsis dates only from 1881–1890. Over the whole period the fall from non-septic causes is greater than from sepsis.

In the decade 1851–1860 the mortality from all causes was 4.7 per 1,000 births—1.5 from sepsis, 3.2 from accidents; if we take 1911–1917 the total mortality is 1.4 from sepsis, 2.62 from accidents, a total of 4.02 per 1,000.

No one event has produced so much effect in midwifery as the passing of the Midwives Act, 1902, whereby it became compulsory for any woman who practises as a midwife habitually and for gain to be on the midwives'

* A paper read at the Liverpool Medical Institution, November 21st, 1919.

register. The terms of the licence to practise are much more stringent than those for medical practice; any one can practise medicine or surgery without being registered, and the case for dentistry is worse. The Midwives Act has been in force for nearly fifteen years, and has already produced far-reaching effects, and in the near future will produce more. In centres such as Liverpool the practice of midwifery is passing into the hands of midwives almost entirely. Dr. Hope, the medical officer of health, in his report for 1918, states that 83 per cent. of the births in Liverpool are attended by midwives and the Maternity Hospital, so that only 1,002 births, or 5.84 per cent. of the whole, were notified by medical men; the midwives' cases had a death rate from puerperal sepsis less by far than the rate for the country and much less than the Liverpool cases attended by medical men. Out of 17,133 births in Liverpool 28 cases of sepsis were notified and 17 deaths were registered; among the 28 cases notified 16 deaths took place—9 deaths in midwives' cases, a mortality of 0.63 per 1,000 births attended, and either 7 or 8 deaths in the 17 per cent. of cases attended by other than midwives, a death rate from sepsis of 2.4 per 1,000 births. It would be of much interest if Dr. Hope published the same details of doctors' cases as of midwives'. As the report reads at present it looks as if the doctors had four times as much sepsis in the women they attend as midwives. When speaking of midwives' cases Dr. Hope means cases where a midwife attended in the first instance, even if a doctor is called in after. It is not only in Liverpool that the advantage rests with midwives. In a paper read before the American Association of Obstetricians and Gynecologists at Newark, N.J., in 1917, the figures for midwives were much better than for the rest of the city, and the same explanation was given as I suggested in 1912—namely, the prevalence of operative interference in cases attended by doctors. Dr. Arnold Lea, in his monograph on puerperal sepsis, said:

> There can be little doubt that the introduction of chloroform has been accompanied by a distinct increase in puerperal mortality. Before this time operations were undertaken rarely and with reluctance, but with the general introduction of anaesthesia they were performed with increasing frequency, and a distinct increase in mortality can be traced to this fact. Statistics show that in at least 40 per cent. of fatal cases of puerperal infection, some operative procedure has been carried out.

Forceps delivery, too often with an undilated cervix, or in cases of inertia, to save time or please the patient, is, in my experience, most frequently the cause of sepsis; manual removal of the placenta also is often a cause.

Whatever the explanation of the facts may be, it remains that, whereas previous to the enforcement of the Act the sepsis death rate had not much diminished, since the enforcement of the Act there has been a marked fall in the puerperal death rate, especially from sepsis, and most markedly in such places as Liverpool and Manchester, where there are many midwives well trained and supervised. The puerperal mortality in Liverpool has for years been below that of England and Wales and much below that of Lancashire.

Authorities seem to be conscious of the fact that all is not as it should be, and are making inquiries as to the training that medical students are getting in obstetrics and gynaecology. The General Medical Council in 1905 and 1907, and more recently, for London only, a committee appointed by the Royal Society of Medicine have been investigating the matter. The recommendations of the committee are not less than revolutionary, but, I fear, impossible. Every teaching hospital is to have accommodation for far more women than at present, new hospitals are to be built, and the medical student is to reside for four months in such a hospital, giving the whole of that time to the subjects of obstetrics, gynaecology, and infant welfare. Further, the clinical instruction is to be given by the senior officers on the staff, who, for periods of five to seven years, are to live on the premises but to carry on consulting practice. One does not see where the student is going to find the time. Every teacher in his curriculum claims that the student should devote more—much more—time to that teacher's particular subject. My experience with house-surgeons tells me that four months is none too much time to enable even a qualified man to become a reliable practical obstetrician and gynaecologist. The midwife's training is superior to the medical student's in that for six months she lives in an obstetrical atmosphere and does nothing but midwifery; the weak point about her is in the class from which she is drawn, and her lack of general education. She will not improve until she can make a decent living wage by her practice; at present, with the small fees she obtains, usually 10s. 6d. or 15s., and the numbers of cases she can efficiently look after—say 150, the calling is not likely to attract a better class woman.

For the medical student there are many difficulties in the way of adequate clinical instruction, the lack of beds, of teachers, and, not least, the dislike all women have to being demonstrated, especially during parturition. When I think of the large number of medical men who never intend to practise midwifery, and the difficulties of adequate clinical instruction, I wonder if it is worth while to oblige all to qualify in obstetrics. The tendency, I am sure, is to hand over midwifery to midwives, with adequate hospital accommodation and adequate staffs of obstetricians and gynaecologists, men and women who are specializing in the subject. The days of the general practitioner as an obstetrician are, to my mind, numbered. In the past a young man starting in general practice, the London report points out, found his work chiefly to be the care of the minor ailments of women and children and midwifery—the very subjects to which he has paid least attention; he probably knew the most recent methods of doing a gastro-enterostomy, and might be a keen bacteriologist, but he felt rather astray when baby had colic or the woman could not pass water in the fourth month of pregnancy.

While ordinary normal midwifery is passing into the hands of the midwife, great changes have been taking place in the purely surgical or scientific aspect of practice. I can best put that by giving a very short account of the Liverpool Maternity Hospital and its work in the past and at the present. The present hospital in Brownlow Hill was built in 1884 and opened for patients in 1885; Drs. Armstrong, Wood, and Briggs were then appointed honorary medical officers. The charity or outdoor department had originated in 1796 as a help to the wives of soldiers in the Peninsular war. I need not do more than allude to the amalgamation of the charity and lying-in hospital in 1870, and the unfortunate career and closure of the building in Myrtle Street in 1880, when the gynaecological part split off and became the Women's Hospital in Shaw Street.

TABLE II.—*The Liverpool Maternity Hospital, 1885–1918.*

	1885-1894.	1895-1904.	1905-1914.	1915-1918.
Admissions (average) per an.	147	201	523	680
Labours (average) per an.	147	201	489	572
Abnormalities (per cent.)...	9.3	14.4	30.9	37.0
Deaths (total)	17=11.5 per 1,000	45=22 per 1,000	100=18 per 1,000	51=21.1 per 1,000
Caesarean sections	1	10; 2 D.	144; 8 D.	112; 4 D.
Forceps	68	129	245	171
Version	11	18	137	117
Induction of premature labour	10	37	103	83
Eclampsia	7; 2 D.	38; 17 D.	99; 18 D.	66; 19 D.

Table II presents a sketch of the main features of the work. In the first ten years, 1885–1894, there were 1,471 labours in hospital with 17 deaths (11.5 per 1,000); there was an average abnormality of 11 per cent. It was in 1894 that the first Caesarean section was performed by Dr. Briggs. The operative work otherwise was limited to an average of 6 forceps cases per annum with an occasional version and induction of premature labour. In the next ten years, 1895–1904, the average admissions came to 201 (14 per cent. abnormal) and a death rate of 22 per 1,000. There were about double the number of operative cases, including 10 Caesarean sections. In the third ten years, 1905–14, the average rate of admission was 528 (over 30 per cent. of abnormality). The death rate was 18 per 1,000, and the operative work five times as much as in the previous ten years—144 Caesarean sections, 245 forceps cases, 137 versions, 108 inductions, and 99 cases of eclampsia. Since

1914 the work has continued to increase, the average of admissions has been 680 a year, and admission has had to be refused almost daily for lack of beds. There has been an average abnormality of 37 per cent. The death rate has been 21 per 1,000, and the operative work is about double the amount of the previous ten years, and goes on increasing. A very large proportion of the cases of eclampsia that occur in Liverpool are treated in our hospital; in 1917 there were in Liverpool 6 deaths, 5 in hospital; in 1916 9 deaths, 6 in hospital; in 1915 7 deaths, 3 in hospital. I would draw attention to the figures connected with eclampsia in the first twenty years—42 per cent. were fatal. In the last fourteen years 22 per cent. died.

I think no one can avoid concluding that there is a rapidly increasing call for hospital treatment. Sepsis in cases dealt with entirely in hospital has almost disappeared. There can be no doubt that we are now saving many lives both of mothers and children by the increased possibilities of abdominal surgery; every year Caesarean section is increasingly resorted to, and its field extends. At the beginning of the period I review it was limited to cases which could not possibly be delivered any other way, and for some time only extreme deformity was considered to justify the operation. We have done it successfully for rupture of the uterus, for concealed accidental haemorrhage, for placenta praevia, and it has been done for eclampsia and for cases in which renal disease has caused oedema and threatened eclampsia. Our fatal cases have been mostly those in which attempts had previously been made to deliver, or in almost hopeless cases of ruptured uterus.

Another, and perhaps the greatest, advance in the past few years has been the systematic measuring, especially of primiparae, at the hospital and at the pre-maternity centres; many cases are found with unsuspected pelvic deformity of the minor degree in which a judicious induction about three weeks before full time results usually in a comparatively easy confinement and a live child. High forceps cases become less and less frequent.

What may we look for in the future? Is midwifery to leave the general practitioner altogether? I think most of them look upon midwifery as a nuisance, and in the advertising columns of the medical papers "no midwifery or very few" seems to enhance the chance of a sale. I think few in Liverpool will collect 3,900 cases like Dr. Park.

Is midwifery and infant welfare to become a branch of the public health service? The supervising authority is already in charge of 83 per cent. of the births in Liverpool. No specialist in obstetrics could make a living out of it alone, for the bulk of the operative work is among those who expect the State to provide, and those who can pay are limiting their families, so the two specialities must, for economic as well as other good reasons, be practised together.

From another point of view, the more one sees of confinements the less one likes the makeshift arrangements that are usually considered sufficient in private practice. There is no doubt that the training of the midwife has lessened the mortality from sepsis, but I should like to see all women attended under hospital conditions, and all labours conducted with all the care and preparation that are given to any serious operation in surgery. There can be no greater loss to the State than by carelessness in midwifery; no loss is so sad as the death of a young mother. Further, even short of death, the injuries and incapacities inflicted on women in childbirth and on the children themselves are a matter of most urgent consideration.

Conclusions.

1. The results of obstetric practice remain unsatisfactory; the death rate from childbirth, largely preventable, remains too high; too many injuries follow, too many children are lost and injured.

2. More adequate hospital accommodation is required.

3. Midwifery is passing into the hands of midwives and specialists.

4. Adequate and complete training in midwifery for all medical students is impossible even with increased hospital beds, and is not necessary for all, as many will never practise obstetrics. As to this last clause I hold no very fixed convictions.

EXPERIMENTS ON THE DESTRUCTION OF LICE AND NITS.

I.

The Survival Period of Lice and Nits (*Pediculus humanus*) when Submerged in Tap Water and Water containing 1 per Cent. of Salt at Various Temperatures.

BY

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The series of experiments with which this paper deals were carried out in order to test the correctness of a claim made by an official of the London County Council that an effective method of dealing with verminous sheets was to soak them for twenty-four hours in water containing salt in the proportion of 1 lb. to 10 or 12 gallons of water; the temperature of the water was not stated.

Method.

The method adopted was to immerse nits on slips of army shirt flannel and active lice on similar material in tubes containing tap water or 1 per cent. salt solution kept at various temperatures. The number of nits available for the trials, owing to other calls, was somewhat restricted, and in consequence of the females crowding their eggs into small clusters, the numbers used for the different tests varied from 36 to 120, with an average of 72. In the case of eggs immersed at 30° F. and 46° F. the batches were divided, one-half being removed for incubation after 50 hours and the remainder at the end of a week. The number of active lice in each trial was 20 to 25. The plan adopted was to remove a few at a time, dry them on filter paper, and place in card boxes kept at 82° F. The period needed for revival of the apparently drowned lice was generally not more than an hour, but in several instances revivals took place after 3 hours, and in two cases after 5 hours (at 60° to 63° F.).

Active Lice.

At 91° F. no mortality resulted from four hours' immersion; after 7 hours 4 out of 5 removed from the salt solution recovered, but only one out of the same number taken from the tap water. None survived 24 hours in either tap or salt water. At 82° F. all were killed within 31 hours. At 60° to 63° F. all of the lice removed after 19 hours from both tap and salt water recovered; single lice removed after 46 hours revived, but all the remainder (over 50 per cent.) were dead when removed after 47 hours. At 46° F. no mortality occurred among samples of 6 lice removed from both salt and tap water after 19 hours, nor among further samples of 5 taken out after 47 hours, but after 67 hours 1 out of 3 had been killed by immersion in tap water, though all of a similar sample from the salt water revived. Samples removed after 96 hours from both tubes were dead, as were also the remainder taken out after 168 hours. At 30° F. 4 out of 7 revived when taken out of salt water after 67 hours, and 2 out of 3 removed from the tap water; of the remainder, after 168 hours' immersion, 1 out of 18 survived the effects of salt water, but all of the 17 in tap water were killed.

Nits.

Four per cent. hatched after 22 hours in salt water at 91° F., but none in tap water. At 82° F. 45 per cent. survived 26 hours in salt water and 53 per cent. in tap water. At 60° to 63° F. 68 per cent. hatched after 45 hours in salt water and 42 per cent. after a similar period in tap water. The figures at 46° F. were, in salt water 73 per cent. after 50 hours and 5 per cent. after 168 hours, while in tap water at this temperature 72 per cent. hatched after 50 hours but none after 168. At 30° F. 76 per cent. survived 50 hours in salt water, but all were dead after 168 hours; in tap water at 30° F. only 58 per cent. hatched after 50 hours, but 18 per cent. survived 168 hours' immersion.

It will be noted that for both lice and nits the survival period increased with the decrease of temperature, presumably owing to the slowing down of physiological action due to cold rendering their need for oxygen less acute. The nits showed a much longer survival period than the active lice. As regards the practical point at issue, no apparent advantage is gained by the addition of salt, plain tap water giving results just as good, and in some cases better. Temperature, however, proved to be a very important factor. It is quite within the bounds of possibility that the practice of immersing sheets in salt water gave successful results during hot summer weather, active lice being destroyed, and nits, if present, failing to hatch owing to the want of the continued heat necessary for their incubation; but the evidence obtained shows that no reliance can be placed on the simple soaking of verminous textiles in water even for so long a period as 24 hours unless the temperature of the water is above 90° F.

II.

Experiments concerning the Destruction of Active Lice (*Pediculus humanus*) by Solutions of Cresol Soap Emulsion and Lysol, and of Lice and Nits with Kerosene, with a View to the Use of these Remedies for the Treatment of Verminous Heads.

by

A. Bacot, F.E.S., and Captain L. Lloyd, R.A.M.C.(T.).

In a previous paper dealing with the destruction of the nits of *Pediculus humanus*[1] our object was to ascertain the value of cresol soap emulsion and lysol as an aid to military officers in charge of baths and washhouses in ridding garments of lice and nits. The present paper is published rather with a view to assist civil authorities by indicating what reliance may be placed upon these and other means for the treatment of verminous heads, together with the modifications of the methods of application necessary to ensure the greatest efficiency.

It was assumed in our previous work that active lice would be less likely to survive the combined processes of washing and immersion in dilute lysol and cresol than their nits, and if the period of starvation that this process and laundering together involve be allowed for, our assumption was probably correct. When, however, we tested these means of louse destruction for verminous heads, which after a thorough sponging with cold dilute lysol were rinsed with water till they were free from the disinfectant, we found that lice proved more resistant to the treatment than nits, and suffered but little from it. This induced us to begin again experiments *in vitro* in order to discover the potency of the various factors which might play their parts in affecting the toxic action of the solutions. The effects of varying the time of immersion, the temperature and strength of the solution, as well as the method of experiment, were studied. Lysol solutions alone were used in the earlier experiments.

The first method of experiment adopted was to drop active lice free into the solutions, and at the end of the immersion to place them on filter paper to drain in an incubator at a temperature of 80° F. The result was judged at the end of twenty-four hours after their removal from the solutions.

First Series of Experiments.

In the first series the effect of varying the strength of the solution and the time of immersion was tested, the temperature of the solution being roughly constant at 65° to 68° F. Immersion in solutions of 0.5 per cent., 1 per cent., and 2 per cent. strength for 30 minutes showed a mortality of 1 out of 25 in the 2 per cent. solution only. This was apparently, however, a chance result, as none were killed in the 2 per cent. solution after a 40 minutes' immersion, though 2 out of 10 died as a result of 60 minutes' exposure to the same conditions.

A 3 per cent. solution killed 1 out of 5 after 30 minutes, and also gave the same result after 60 minutes. At 4 per cent. 2 out of 5 were killed after 30 minutes, and none out of 5 at 60 minutes. A 5 per cent. solution killed 3 out of 5 in 30, and only 1 out of 5 in 60 minutes. With a 7.5 per cent. solution 3 out of 5 died from the effects of 30 minutes', and 5 out of 5 from the effects of a 60 minutes' immersion. A 10 per cent. solution killed 4 out of 5 in 30 minutes and 4 out of 5 in 60 minutes.

It will be seen from these figures that the results were erratic, 60 minutes' immersion in 4 per cent. and 5 per cent. solutions being less effective than 30 minutes, while some lice survived the apparently drastic treatment of 30 minutes' immersion in 7.5 per cent. and 10 per cent. solutions of lysol.

Second Series of Experiments.

In the second series the effect of varying the temperature of the solution and keeping constant the strength of the solution at 2 per cent. and the time of immersion at 30 minutes was tried, the treatment of the lice after removal from the fluid remaining the same. In the first three tests at 65° F., 74° to 79° F., and 79° to 86° F., none were killed. Of the batch immersed at 84° F., rising to 93° F., 40 per cent. were killed. Of the next three batches, immersed respectively at 97° F., 86° F. rising to 99° F., and at 99° F., 60 per cent. were killed; while the mortality in the remaining five tests, the lice being immersed respectively at 100° F., 99° F. rising to 102° F., 102° F., 93° F. rising to 104° F., and 104° F., was 100 per cent.

In this case the results showed a steadily increasing toxicity as the temperature increased from 86° F. to body heat. At 100° F. and upwards the mortality was constantly 100 per cent. Such brief immersions in water at 104° F. have no ill effects upon lice.

From the foregoing facts it seems clear that if lice are immersed in fluids at temperatures somewhat below that which they experience on man they are able, within limits, to resist their penetration. If, however, garments infested with lice are immersed in a 2 per cent. solution of lysol at 100° to 104° F. for 30 minutes they are rendered safe whatever the subsequent treatment may be, since the lethal point for both lice and their nits has been passed during the immersion. From these two series of experiments the conclusion drawn is that the raising of the temperature gives a more certain result than increasing the strength of the solutions in question or the period of immersion.

The aim of a third and fourth series of trials was to test the effect of lysol or cresol when allowed to remain in the fabric on active lice that had presumably survived the period of immersion but were not removed from the impregnated garments.

Third and Fourth Series of Experiments.

The method adopted was to put slips of army shirt flannel on which a number of active lice were placed into solutions of varying strength and temperature for 5, 20, or 60 minutes; then to allow the excess fluid to drain off by laying them on filter paper, after which the slips were put into card boxes and kept at 65° F. for 20 to 24 hours; the general scheme of the experiments being to use such conditions as would probably apply if verminous garments, after dipping, were allowed to dry without further washing or rinsing. The fluids used were 1½ per cent. and 2 per cent. dilutions of lysol and liquor cresoli saponatus fortis, each series of trials being repeated at 32° F., 59° F., 69° F., 82° F., and 97° F. respectively. The results of this lengthy series, amounting in all to 60 separate experiments, show that 20 minutes in 2 per cent. solutions of either cresol soap or lysol at 68° F. or over, and 60 minutes in 1½ per cent. solutions at 32° F. and upwards, will kill all the active lice under these conditions.

It appears, therefore, that if it is not possible to use heated solutions, the complete disinfestation of garments or bedding may still be achieved with cold solutions, provided that their strength is not less than 1½ per cent. with an immersion period of one hour, and that the solution remaining in the fabric after dipping be allowed to dry in.

The Destruction of Lice and Nits in Hair.

That the conclusions respecting the use of heated solutions of cresol soap or lysol do not apply equally to the destruction of lice in hair is shown by the following experiment:

Two muslin bags, each containing 20 active lice, were bound close to the scalp of a man with a heavy crop of hair, and two cotton threads covered with nits were similarly fastened amongst his hair. The hair was then continuously sponged for 30 minutes with a 2 per cent. solution of lysol, which had at the commencement a temperature of 104° F., falling to 91° F. at the end of the operation. The head was then washed with water, the lice were removed and placed in an incubator, while the nits were incubated on the body. Two of the lice, one male and one female, survived, but none of the treated nits hatched. A control series of eggs of the same parentage hatched normally.

A certainly effective result cannot therefore be obtained for head infestation by sponging the head with 2 per cent. lysol, either warm or cold, if the sponging is followed by an immediate rinsing of the hair.

The crucial point seems to be indicated by the following experiment:

A piece of flannel, containing 40 adult lice, was immersed in a 2 per cent. lysol solution at a temperature of 68° F. for 30 minutes; 20 of the lice were then removed from the flannel, drained, and placed in an incubator. Of these, 90 per cent. recovered. The flannel, without rinsing and with the remaining 20 lice upon it, was also incubated, and none of the lice recovered.

An obvious explanation of these results is that the lice are not passive but active factors in the process, possibly protecting themselves against the entrance of fluids into the system by closing their spiracles. If the period of immersion is short, lasting for a few minutes only, no penetration occurs, but when it is prolonged, or if the temperature is sufficiently high to allow of the insects' metabolism being maintained at its normal speed, the need for oxygen leads to attempted breathing, and the fluid finds entrance through the tracheal passages, killing in a longer or shorter time, according to its toxicity.

Such an explanation would also account for the irregularities of the results shown in Series 3 and 4 when experimenting under cool conditions. The results, as noted above, obtained by Bacot and Talbot, working with lice immersed in tap water at various temperatures, are confirmatory in that they bring out clearly the lengthening survival period due to cooler conditions, presumably due to

the slowing down of physiological action; while the evidence obtained by the authors in sterilizing lice outwardly by immersion in lysol solution in connexion with trench fever res arch also points in the same direction.

In order to obtain further evidence on this question, which is of great importance from the point of view of the treatment of verminous heads, the following experiment was made:

EXPERIMENT V.—*Effect of Immersion in Kerosene.*

Kerosene as supplied at retail shops was used at a temperature of 20°C. (68° F.), the period of immersion being 5 minutes. Most of the lice made active movements while immersed, and one or two made slight movements immediately after removal.

METHOD.

Active Lice.

Active lice were placed on slips of flannel shirt material on which nits had been laid by a number of females during a period of one week.

First Batch (16 adults, 6 nymphs, 3 larvae).—After immersion the slip of flannel was laid for 10 minutes on filter paper to drain, then put into a cardboard box and kept in incubator at 80° F. No recovery.

Second Batch (10 adults, 6 nymphs, 9 larvae).—After immersion the lice were removed to filter paper, dried off and placed on a fresh slip of flannel in a cardboard box and kept in incubator at 80° F. When examined 18 hours later 6 were living (2 feeble and 4 nearly dead), 19 dead. The survivors died without recovering full activity.

Third Batch (7 adults, 5 nymphs, 9 larvae).—After immersion the lice were placed in soapy water at 82° F. then transferred to clean water at the same temperature and drained off on filter paper, transferred to a fresh slip of flannel in a cardboard box and kept in incubato at 80° F On examination 18 hours later 2 (nymphs) were active. 2 were feeble, 8 very feeble, and 9 dead. The survivors died within 48 hours, but as no attempt at feeding was made it cannot be concluded that the nymphs which recovered their activity died from the after-effects of their immersion, though this is probable.

Nits.

These received similar treatment to the active lice, save that in the case of the second batch a number of the eggs were removed from the flannel to which they were attached, and incubated apart from the remainder, which were left attached to it. The results were as follows:

First Batch (170 nits).—None hatched.

Second Batch (191 nits).—101 nits were removed from the flannel; of these 82 hatched; 90 nits were left on the flannel, which was drained of oil so far as possible by gentle pressure between filter paper; only 2 hatched.

Third Batch (182 nits).—At least 3 of these eggs developed, but the young lice died during the process of emergence from the egg. None of the remainder hatched.

Conclusions.

That fatality to active lice following immersion in kerosene is due rather to the oil on the surface of the insect or the object to which it clings obtaining entrance to its body after removal from the fluid than during the short period of immersion.

As regards nits, penetration by kerosene is too slow for its entrance into the egg to occur within the few minutes of immersion, but subsequent to their removal the fluid *or its vapour* inhibits development. In the case of Batch 3, the subsequent washing produced some modification in the egg or its membranes, which prevents normal hatching on the part of the young louse.

In view of this experiment it seems clear that the explanation as set forth above in regard to the closing of the spiracles against the entrance of fluids must be correct, and that provided the insects are not rendered too sluggish to react owing to cold or prevented by their need for oxygen, they can resist the entrance of fluids into their bodies. Probably the action is not volitional, but a necessary reflex (similar to winking) evolved to guard against the dangers arising owing to sudden submersion in sweat.

In the case of nits, where the question of penetration seems likely to be largely a matter of surface tension due to the nature and temperature of the fluid, possibly conditioned by the stage of development which the eggs have attained, it seems possible that eggs that are wetted by the fluid but not entirely immersed, may be more readily penetrated than those completely immersed, while the possibility must be considered of death resulting from the vapour rather than the fluid itself finding entrance into the egg.

REFERENCE.

[1] Bacot and Lloyd: Destruction of Nits of the Clothes Louse by Solutions of Cresol Soap Emulsion and Lysol, BRITISH MEDICAL JOURNAL, April 27th, 1918.

A *Bulletin of the Air Medical Service* will shortly be issued by the United States. It will be under the authority of the Director of the Air Service, and will make public the results of studies and experiments made by medical research laboratories.

RADIUM IN THE TREATMENT OF TUBERCULOUS ADENITIS.

BY

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THE therapeutic properties of radium have always been a fascinating subject, both to the medical profession and the laity, and the medical profession have by no means, I think, reached the limits of the subject yet.

During 1913–14 I thought I would see what could be done for tuberculous glands by radium. As a result I am convinced that the day of radical operation will soon be past, that it will no longer be necessary to send children thus affected for prolonged periods to the seaside, and that the unsightly scars which disfigure the necks of so many girls can now be avoided. Radium is, if properly used, a safe, and as far as I can see a certain, cure, whether for an early or an advanced case of tuberculous glands. Within the period named I treated between twenty and thirty cases of every grade with radium. In every case the swellings and even old sinuses faded away. Unless there were already sinuses present, no scars were left. The skin was in some a little red for a few weeks from the action of the radium, but this always disappeared.

In no case was any ulceration caused. It is unnecessary to describe all the initial experiments and the doses used. As a result I find as follows:

Fifteen milligrams of radium bromide, spread out on a flat circular applicator 1¼ in. in diameter, and mixed with a special varnish to keep it even and prevent loss, is sufficient for this kind of treatment. The applicator has a screen of silver 1 mm. thick, and a piece of thin gutta-percha tissue tied over the whole to prevent soiling of the radium. The applicator is strapped on over the tuberculous glands. I have found ten hours a suitable time for each application of the above strength—that is, 150 milligram hours. The applicator is applied when the patient goes to bed and taken off in the morning. A different gland or group of glands can be attacked at each sitting till all have been covered, and the course then started again.

The patients usually have had two applications a week. Nothing was noticed for from a week to ten days, but from that time a gradual shrinkage of the glands was observed till nothing could be felt except a few fibrous nodules. I continue the treatment till all signs of trouble have disappeared. In very bad cases I usually gave in addition a few applications three months later, but doubt whether this is really necessary if the first treatment is properly carried out.

Since my demobilization from the R.A.M.C. I have had an opportunity of inspecting many of the patients I treated in 1913–14. In none of them can I find a trace of any further trouble, nor have I heard of any I have not actually seen having any signs of recurrence. Evidently, therefore, the cure is usually a lasting one. Should a case recur, I have no doubt that a further course of treatment would restore the patient to health again.

I will briefly quote three typical cases to illustrate the different degrees of the disease treated.

CASE I.

A boy aged 4. Early tuberculous glands of the left tonsillar and carotid region; no obvious signs of softening.

He had five applications of 15 mg. of radium, ten hours each application, at intervals of seven days. At the end of this time all signs of the disease had disappeared.

CASE II.

A woman, aged about 30, had had a swelling on the right side of the neck for a year. It had been treated by iodex, tonics, change of air, and all the usual remedies. When I first saw her the mass of glands was nearly the size of an orange, and there were marked signs of caseation; I was, in fact, afraid lest they would break down and suppurate through the skin before the action of the radium could have much effect. Her general health had suffered considerably.

I treated her twice a week with 15 mg. of radium, ten hours each time for ten sittings. There was an interval of a month, while she was paying a visit, in the middle of the treatment. At the end of that time the neck was perfectly normal. Fortunately the radium began its work before surface suppuration had occurred. I saw her three months later, and she was

thoroughly restored to health and there were no signs of there ever having been any trouble in the neck. To take no risks I gave her three more similar applications.

CASE III.

A boy, aged 4, one of a large family, nearly all of whom had suffered from tuberculosis; several had died. His mother and one or two uncles and aunts had died of phthisis. When I first saw him he had extensive tuberculous adenitis on both sides of the neck. The glands had suppurated, and sinuses secondarily infected were present.

I gave him ten applications of from eight to twelve hours each, twice a week. On several of these occasions, after four hours the applicator was moved to cover another group of glands, and so on. The same strength, 15 mg., of radium was employed. At the end of this treatment all the sinuses had healed, and the masses of glands had shrunk till only a few fibrous nodules could be felt. The boy had also improved much in health, and when I saw him a few months later one would hardly recognize him.

Carious teeth or unhealthy tonsils and adenoids, if present, must be dealt with at the beginning of the treatment, as it would be folly to cure the existing glands and leave a future source of infection behind.

FATAL CEREBRAL HAEMORRHAGE AT 34.

BY

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THE following report may be of interest owing to the difficulties of diagnosis the case presented and to the comparative rarity, as far as I am aware, of the condition:

A single woman, aged 34, of healthy parentage, whose previous health had been good, and who had had no serious illnesses, was in her usual health till September 8th.

On that day, while straining to reach up to a high shelf, she had a sudden sensation "as though someone had struck her on the back of the head," followed by a "fainting attack" (though she did not lose consciousness) and severe occipital headache, which prevented her sleeping that night.

On September 9th she came to my surgery complaining of occipital headache. The temperature and pulse were normal; she was given aspirin and told to report again in the morning. She then said that she had had a good night and that the headache had practically disappeared. She was given a tonic and told to report again if necessary. The "attack" was attributed to the sun, the weather being very hot at the time.

She remained quite well except for slight occasional stiffness of the neck until the afternoon of September 14th, when she had a sudden seizure; without any warning she fell suddenly unconscious. I saw her ten minutes after the onset of the attack. She was then deeply unconscious, the conjunctival reflex was absent, and the complexion ashen grey; there was very marked Cheyne-Stokes respiration and very feeble pulse (100). The reflexes were variable during the attack, which at first was characterized by slight spasmodic contractions of the arms and chewing movements of the jaws, alternating with periods of complete relaxation. There was no definite paralysis of any part. After about an hour she was suddenly seized with violent convulsions with most extreme opisthotonos, which lasted on and off nearly another hour, when she vomited and began to come round. She passed water and sweated during the fit.

On partial return to consciousness she screamed out with agonizing pains in the occipital region, rolling her head backwards and forwards apparently in extreme distress. There was no retraction. Kernig's sign was doubtful, as were the plantar reflexes. The knee-jerks were equal and variable.

She was given morphine gr. ¼, which eased the pain, though she had no sleep; she vomited frequently during the night.

On September 15th she was completely conscious and mentally clear. She complained of very severe occipital headache and vomited occasionally. The temperature was 98°, and the pulse 100; systolic pressure 150. The skin was moist. She was passing water freely. Urine, specific gravity 1025, acid, very faint cloud of albumin; partially reduced Fehling's solution; microscopically a few blood casts and red cells. Ophthalmoscopic examination showed clear discs and the fundus normal on both sides. During the day the vomiting ceased and the headache improved.

On September 16th the headache was more severe and there was definite retraction and well marked Kernig sign. The temperature began to rise (99.2°); the pulse fell from 100 to 60. Lumbar puncture was performed in the afternoon. The fluid was under great pressure, spurting out on withdrawing the trocar; about 1 c.cm. was withdrawn. The bacteriological examination was difficult, as the specimen was contaminated with blood. The report stated that the fluid was sterile and polymorph leucocytosis absent.

From September 16th to 25th there was steady improvement, the chief difficulties being the headache (which gradually became frontal as well as occipital, though less severe) and a persistent insomnia. The albuminuria disappeared after the first forty-eight hours. The glycosuria became more pronounced, but was less than 1 per cent.; there was no acetonuria. A most marked feature, considering the severity of the symptoms, was the general good spirits of the patient in spite of the headache, and the mental clearness. There was no further vomiting; the optic discs remained clear.

On September 25th, after a good night, and while appearing better than usual, she had a seizure similar to that of the 14th, which was fatal in about two minutes.

Post-mortem Examination.—Brain: There was a large clot of blood between the dura and the brain; the bleeding point was apparently in the frontal region, in the neigbourhood of the crest of the ethmoid. The clot extended between the frontal lobes and on the outer surface of the right frontal lobe as far back as the motor area. In places the brain substance was torn. There was no evidence of disease of bone nor any sign of cerebral tumour or abscess. There was no evidence of any inflammatory condition at the base or elsewhere. The other organs were healthy.

Presumably the first seizure was caused by a minute haemorrhage, which was not discovered *post mortem*. The haemorrhage seen at the *post-mortem* examination was presumably the one which caused the fatal seizure.

The interesting features from the point of view of diagnosis were: The basal symptoms accompanied by evident raised pressure in the spinal canal, the marked mental clearness all through, and the absence of vomiting and optic neuritis.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

CAESAREAN SECTION FOR PLACENTA PRAEVIA WITH CONCEALED HAEMORRHAGE.

ALTHOUGH the case reported below had a fatal termination, most probably from pulmonary apoplexy, I consider the treatment by Caesarean section was correct and satisfactory. I cannot remember reading of a case of placenta praevia with concealed haemorrhage so profuse as to fill the uterus, distending it and causing tonic contraction; and, although some authorities on the subject agree that Caesarean section is correct in certain cases of placenta praevia, I have not yet seen the operation recorded in any such cases.

On November 6th, at 5 p.m., I was called to a woman aged 39, primipara, eight months pregnant. She was in agonizing pain, and on examination of the abdomen the uterus was very distended, and in a state of tonic contraction, so that nothing but the shape of it could be made out. Examining per vagina, I found the os dilated to the size of half a crown, rigid, and a soft mass presenting with no landmarks; the vagina was very narrow and rigid. The pulse was about 120, and the patient very restless; on inquiry I found she had been in this condition since 2 o'clock. I came to the conclusion that she must be delivered as soon as possible; I therefore decided to call in Dr. W. S. McDougall to see if he agreed as to removal to hospital and Caesarean section. During the interval before he arrived the presenting part gave way, and a large haemorrhage occurred, blanching the patient. On arrival Dr. McDougall made an examination and found the placenta at the os, and nothing else presenting; the patient was bleeding. He agreed with me, and the patient was removed to the Carshalton, Beddington, and Wallington District Hospital.

At 9.30 p.m. the patient was put on the table; Dr. McDougall gave the anaesthetic, and Dr. W. H. Passmore assisted me. Operating by the abdominal route, I opened the uterus with a median longitudinal incision, and found the uterus full of clots. I extracted the child already dead, and cleared the uterus, and sewed up with five or six catgut sutures through-and-through, missing the mucosa. Having completed the toilet of the peritoneum, the uterus was returned, and the abdomen closed with three layers of sutures; during the later stages of the operation ergotinine and pituitary extract were injected. The operation was completed in fifteen and a half minutes, a pint of saline was given on the table, and later she was given a continuous saline.

The next morning the patient's condition was satisfactory, except that she vomited when she took feeds, chiefly of Valentine's juice. On November 8th the abdomen was much distended, and the vomit becoming offensive and enemas giving very little relief, it was apparent that the bowel was paralysed. Towards evening I made an opening in the ileum, which relieved the situation; the sickness stopped, the distension disappeared, and in twenty-four hours the bowels acted in the ordinary way. On November 9th the condition was good, the patient taking some food. Next day the condition was still

good, but towards evening the patient became flushed, with temperature 101.8°, but she passed a good night. On November 11th, she was restless during the afternoon; at 7.30 p.m. she had a good action of the bowels after an enema; her temperature rose to 104°, but she slept till 11.30 p.m., when the temperature dropped to 102°. At this time the patient asked for a bedpan, and whilst using it was seized with a bad attack of dyspnoea; oxygen was given, but she gradually sank and died at 12.10 a.m.

Referring to the discussion on the incision for Caesarean section reported in the British Medical Journal of November 15th, I have always made the longitudinal incision towards the upper part of the uterus in the nine cases of Caesarean section I have performed, and have sewn up, as advocated by Dr. Clifford (Manchester), with very good results.

Arthur Z. C. Cressy,
Honorary Surgeon, Carshalton, Beddington, and Wallington District Hospital.

Reports of Societies.

DEFICIENCY DISEASES.

At a meeting of the Section of Therapeutics and Pharmacology of the Royal Society of Medicine, held on November 18th, Sir W. Hale-White, Vice-President, being in the chair, Professor F. G. Hopkins, F.R.S., opened a discussion on the treatment and management of diseases due to a deficiency of the accessory factors in diet.

He said that the vitamine hypothesis was now passing through a phase during which it would meet with sound and considered criticism. Many experiments and observations were necessary. The small concentration of vitamines in the substances which contained them was no doubt one reason why they had so long been ignored. Another reason was that experimenters in feeding, thinking only of carbohydrates, proteins and fats, never administered these substances pure, so that the pathologist and the experimental investigator were not working along the same lines. It was curious that the factor concerned in the etiology of scurvy was not recognized earlier. Scurvy constituted a remarkably clear example of deficiency disease, yet this had recently been denied by so prominent an authority as McCollum, who had ascribed it to intestinal stasis. The quantitative work at the Lister Institute and experiments with the monkey made the position clear. Thanks to the quantitative experiments we could now classify and indicate the relative potency of the antiscorbutics. There were still certain difficulties in applying the vitamine hypothesis to infantile scurvy. Milk was by no means rich in the antiscorbutic factor, and this factor was easily destroyed. It might therefore be asked why scurvy was not much more common in infants. Many physicians said that though they used pasteurized milk, they had not found it necessary to add antiscorbutics. As an explanation it was just conceivable that the infant started with an excess of the antiscorbutic element. With regard to beri-beri, several officers of the Japanese military services had expressed doubt whether anti-beri-beri vitamine was the sole deterrent. They stated that they had not seen the same improvement after correction of the army diet as had occurred when that of the navy was altered some years ago. In the case of rickets the facts were less well established, but if they proved to be true were of great national importance. He had seen a good deal of Dr. Mellanby's work from personal observation, and was convinced that the influence of the vitamine associated with fats was an all-important factor. That there were contributing factors was quite certain, but these were of minor importance. In exceptional cases the disease might occur without dietetic deficiency. The functioning of some of the vitamines seemed in some way to be concerned with stimulation of the glands of internal secretion. The response of an animal was a more complicated process than a direct action to any one factor. The quantitative demand might depend on the rate of metabolism. Such considerations must be taken into account before it could be held that exceptional cases disproved the hypothesis. There was more evidence in favour of it than of any other view. Referring to the theory of acidosis advanced by Eric Pritchard, he said that it seemed to be based on a misconception of the equilibrium of acids and bases in the blood, and was contrary to the tenets of modern biochemistry. There was another condition associated with the absence of the fat-soluble vitamine—namely, one of the eye, which, beginning as a slight conjunctivitis, often led to destruction of the eyeball. In certain experiments every rat fed only on vegetable fats suffered from this condition. Infection had naturally been suspected, but animals might be mixed together, and only those fed on food lacking in the vitamine developed the symptom, and none of the others. It cleared up with extraordinary rapidity if butter or cod-liver oil were administered. Very rare in this country, it was very common in Denmark, especially when the butter supply was being sent out of the country during the war. Apparently the deficiency needed to be very complete. In pellagra the deficiency seemed to be not one of vitamines, but of some other variety of food. In experiments which he had made some years ago animals given a diet deficient in tryptophane developed a remarkable group of symptoms which, on later consideration, he thought might be those of pellagra. Although he had often tried, he had never been able to repeat this experiment.

Professor F. D. Boyd said that as Consulting Physician to the Egyptian Forces he had had to report on an outbreak of pellagra among Turkish prisoners of war. He and his collaborators had come to the conclusion that the view that pellagra was a deficiency disease was correct. Inquiry into the sanitation showed that it was good. Analysis of the water gave a negative result. Hydrochloric acid was absent from the stomach; this, of course, led to deficient pancreatic secretion, to imperfect digestion and decomposition of food, and also to loss of food elements by diarrhoea. No specific micro-organisms could be found. The blood of fifty patients was examined and not only were no organisms found, but there was also an absence of the mononuclear excess, so constant in protozoal diseases. There was no fever. The cerebro-spinal fluid, urine, and stools also failed to yield any specific organism. The stools of 220 were examined. They were very fetid and contained flagellates and ascarides, but no specific micro-organism. Examination of healthy Turkish prisoners showed that they were in a pre-pellagrous state. It was now recognized that protein was only useful to the body when it contained certain amino-acids. He then exhibited tables and charts which showed that the incidence of beri-beri had no relation to the calorie value of fat or proteins ingested, but depended upon the biological value of the proteins. The association of pellagra with maize could be explained by the low biological value of the protein it contained. It might be asked why there was a seasonal incidence in pellagra, for it occurred chiefly in the spring. It must be remembered that peasants were particularly prone to the disease, and these would have gone through a hard winter, and might therefore be in a pre-pellagrous condition at the end of it. The men who were put upon extra protein gained more weight than those given extra fat or the ordinary ration. They also improved if the absent hydrochloric acid were supplied.

Dr. W. H. Willcox spoke of the incidence of scurvy and beri-beri as it affected the troops in Mesopotamia. A paper by him on the subject will be published shortly.

Dr. Mackenzie Wallace spoke of a substitute for nutrose, made from monkey nuts, which he had prepared for the treatment of beri-beri. It was superior to nutrose and cost only 2d. a pound, as compared to 9s. a pound. A biscuit had been made from the flour. It was very rich in protein and sufficiently palatable to be well received on the whole by the British soldier. Experiments with pigeons had shown it to be very protective against beri-beri, and it also proved efficacious in an epidemic of beri-beri in a criminal settlement.

Dr. H. E. Roaf said that in the treatment of deficiency diseases it was not only necessary to make good the deficiency, but also to see that the deficient substance was properly absorbed. The low biological value of maize might explain its association with beri-beri. Possibly tryptophane was the amino-acid which was missing from maize. The majority of pellagra patients had indicanuria, which meant that there was a further loss of a certain amount of tryptophane. Pellagrous people, *post mortem*, were wasted and the intestine was translucent, and clearly in a condition not

normal for absorption. This must be taken into account in the treatment. For the proper absorption of the substance which was previously lacking administration of hydrochloric acid, predigestion of food, and the treatment of such conditions as dysentery were clearly indicated. The symptoms of pellagra could be explained by defect of the sympathetic nervous system. He had found degeneration of sympathetic ganglion cells. This suggested that in the treatment the sympathetic nervous system should be spared as much as possible, such as by the avoidance of sweating.

Miss Margaret Hume spoke of the comparative value of vitamine-containing foods. Marmite retained the properties of yeast, and one gram added to the experimental ration daily prevented polyneuritis. It had been found that in the bran of cereals it was particularly the germ which had the greatest potency; 1.5 gram of wheat germ similarly prevented polyneuritis. Next in order came egg-yolk and dried peas, beans, etc., but the first two were at least three or four times more powerful, and therefore more suitable. To obtain an antiscorbutic which was suitable for the use of the troops it was necessary to find one so rich that after the lapse of time some potency might remain, or one in such a form that the vitamine could be resuscitated. At first lime juice was thought to supply this need, but it was found that lemon juice was not only four times as potent, but retained its value, which lime juice did not. The accepted statement that the introduction of lime juice had abolished scurvy from the British navy seemed to require an explanation, and a search of the Admiralty records had shown that the term "lime" had been used indifferently at first for limes and lemons, and as a matter of fact lemons for the Mediterranean were first used. A change was made later to lime juice, but by that time steam had been introduced. Germinating pulses had been used in the Archangel area, she believed quite satisfactorily, but they were not suitable for men already sick, as they were indigestible. She thought that the disparity to which Professor Hopkins had referred with regard to the infrequency of scurvy in infants when fed on heated milk might be due to the fact that little antiscorbutic factor was necessary for infants, and the expression of its lack might be greatly delayed, though changes might be produced which remained although the disease known as scurvy never developed.

Dr. Marion Delf spoke of the effects of temperature on accessory food factors. The anti-beri-beri vitamine was stable after heating for two hours at 100° C. The evidence of the effect of temperature on the fat-soluble growth factor was very conflicting. With regard to antiscorbutic factors, that of orange juice was most stable, and the stability of swede juice was very high.

Dr. A. Harden said that orange juice evaporated to dryness retained its protective power for two years; at most it was not reduced by more than one-third of its original potency.

Dr. S. S. Zilva said that after removal of citric acid and solid matter from lemon juice the residue showed no diminution of antiscorbutic value. This had been shown by experiment on monkeys and in the treatment of children affected by infantile scurvy. The advantage of removing these constituents of the juice was that more of the antiscorbutic element could be given without producing alimentary disturbances. The procedure was simple, and could even be done at home by the addition of precipitated chalk. Examination of the teeth of guinea-pigs suffering from scurvy showed marked histological changes. This suggested that lack of the essential vitamines might produce such changes in human beings, and yet no classical scurvy.

INTRATRACHEAL ETHER.

At a meeting of the Section of Anaesthetics of the Royal Society of Medicine, held on November 7th, with Dr. Ll. Powell, President, in the chair, Dr. F. E. Shipway read a paper on intratracheal insufflation of ether in operations which involve bleeding into the air passages. After dealing briefly with the history of the method, the author showed how cases due to war injury had greatly extended its use. His own experience depended on 930 cases, of which 417 were operations on face, mouth, and pharynx. These he arranged in three groups.

1. Gunshot wounds of face, mouth, and pharynx (142 cases).
2. Non-malignant disease of mouth and pharynx (89 cases).
3. Malignant disease (176 cases).

In Group 1 there was uniformity of age and general physical condition. The average length of anaesthesia was greater than in the other groups. Many of the operations lasted over an hour and a half, 20 lasted two or more hours, the longest being three hours and seven minutes. There were 6 patients under 12 years of age.

One case was that of a fisherman weighing 18 st., subject to urgent dyspnoea through nasal obstruction from masses of polypi. The palate had to be held up by the surgeon's finger and the tongue held out in order to secure an airway during induction of anaesthesia. Then the epiglottis was cocainized and the catheter passed.

Two patients in Group 3 were 80 years of age; the youngest was a girl under 12, who underwent removal of the upper jaw. In two of these cases tracheotomy was performed and the catheter placed in the tube. Dr. Shipway described the difficulties that may be met with in passing the catheter in patients of Group 1, difficulties due to scarring and deformity of mouth, jaws, and tongue, and showed how such difficulty could often be overcome by using the upright or semi-recumbent posture and by flexing the head. He approved cocainization of the pharynx and the epiglottis for all administrators who had not yet attained skill in passing the catheter. The advisability of giving preliminary narcotics was discussed. In the young, Dr. Shipway disapproved of it. In adults generally, he preferred morphine $\frac{1}{6}$ gr. with atropine, but never scopolamine. The morphine reduced struggling and thus saved an expenditure of energy, which might play a leading part in collapse or failure to recover. Moreover, with the use of morphine the anaesthetist could maintain by intratracheal insufflation a uniformly light degree of narcosis with perfect quiet on the patient's part.

The anaesthetic could be blown out before the end of operation and the patient returned to bed with full control of his reflexes. The danger of pushing infective material into the lungs or of implanting cancer cells low down in the air passages by the passage of the catheter had not been illustrated in a single case of the series. The claim that intratracheal ether abolished the risk of aspiration or septic pneumonia had been made good by these cases, for it occurred in none. Dr. Shipway alluded to the practice of interrupting the air stream at intervals, and stated that with a moderate pressure, such as existed when the safety valve blew off at 20 or 25 mm. Hg, it was rarely necessary. Such interruptions accompanied by compression of the chest had, however, been found necessary when the apparatus was used for performance of artificial respiration. There were six cases of acute bronchitis, mostly among the emphysematous and chronic bronchitic. Shock was reduced to a minimum by this method of anaesthesia; all the needs of respiration were met and intermittent asphyxia eliminated. Dr. Shipway compared the merits of insufflation with those of delivering the anaesthetic through a laryngotomy or tracheotomy opening, and showed how in many of the war injury cases the latter method was impossible or undesirable. He had abandoned insufflation for exophthalmic goitre cases except in the presence of obstruction.

A discussion followed, in which Mr. Burghard expressed his high opinion of the method, and the President, Dr. Low, Mr. Rood, Dr. C. H. Mott, Dr. McCardie, Mr. F. W. Longhurst, and Mr. Hugh Phillips took part. Afterwards Mr. Geoffrey Marshall, Dr. McCardie, and Dr. Shipway showed nitrous-oxide-ether apparatus which was commented upon by the President, Mr. H. E. G. Boyle, and Mr. Phillips.

EUGENICS AND PUBLIC HEALTH.

At a meeting of the Society of Medical Officers of Health, held on November 21st, Professor H. R. Kenwood presiding, Dr. W. J. Howarth, C.B.E., medical officer of health for the City of London, read a paper on eugenics in relation to public health.

He argued that medical officers of health were practical eugenists, since their work was concerned with the prevention of human suffering, the promotion of human happiness, and the prolongation of human life. Sir George

Newman, in his recent memorandum, placed the subject of eugenics and the principles of sound breeding among the ten principal elements which must form part of a public health policy, and this made it desirable that medical officers of health should consider in what way they could promote progress. It was accepted that innate qualities were of prime importance in matters relating to racial improvement, and the part played by inborn defects in contributing to illness, suffering, and mortality was only now being fully appreciated. Probably more had been done to emphasize this relationship by Professor Karl Pearson than anyone else. In the present state of knowledge the character of any child born could not be predicated, although we might possess a full account of its ancestry. It could, however, be stated with certainty that a child would more probably possess desirable traits if both parents possessed those traits than one in whose parents they were absent or defective. Major Darwin's researches on the part played by economics were referred to, and Dr. Howarth suggested that, although the differential birth rate might, in a comparatively short time, produce marked changes in the constitution of the population, the influence of a differential death rate had to be considered. The fewness of births in the classes successful in life, and the disproportionate number of births born to those in the lower social grade, was not a matter to be ignored if material success in life, or absolute failure, were due to the possession or lack of desirable innate qualities.

The most important possession of human beings was that of intellectual vigour and development, and deficiency in this was without doubt hereditary. The defective class included mental deficiency (so-called), insane persons, epileptics, habitual tramps, those with defective parental instincts, habitual criminals, and the like. It was essential that some means should be found for decreasing the production of the unfit as well as an increase in the number of the fit. In promoting human progress it was of the greatest importance that the value of environment should be properly assessed. Without satisfactory environment the best qualities might fail to be developed. It was impossible, at an early period of life, to differentiate the fit from the unfit, and no social grade possessed a monopoly of brains; from which it followed that no endeavour should be spared to give everyone a chance. In addition, environmental improvements were required by the worthy on the grounds of self-preservation, if the risks from defective character, combined with defective surroundings, were to be avoided by them. In the distribution of doles, direct aid, and other forms of help, it would appear that such gifts should only be given to persons of satisfactory ancestry, but the science was not sufficiently definite, nor was public opinion sufficiently advanced to justify any such proposal being made operative, even should it be desirable. Any measure providing direct help ought to be studied by medical officers of health with a view to ensuring that the worthy profited, and that the unworthy were at least not encouraged in their unworthiness. Education of the more desirable elements of the population appeared to present the best chance of promoting present progress. Attempted education of the less desirable was doomed to disappointment. Education might result in more permanent benefits than violent or radical changes in the marriage laws.

With the object of increasing the birth rate among the middle classes, direct State aid, either through the income tax or by restrictions on hereditary transmission of wealth or otherwise, might be beneficial; but these were questions for the statesman rather than the medical officer of health. Although sterilization of unfit persons would not be accepted in this country, a greater measure of legal control seemed desirable, but such matters should not be ahead of scientific knowledge lest there should be a setback. The diagnosis of mental deficiency needed to be placed on a sound scientific basis with the object of ensuring uniformity of decision and action. Dr. Howarth pointed out, in conclusion, that medical officers of health possessed a greater opportunity than any other workers for collecting valuable information on practically every social problem. This opportunity should be seized, but it should be directed by a Government department under the charge of an expert rather than that each medical officer should collect his information as seemed most desirable to him, and, as a consequence, expose himself to the risk of framing conclusions based on insufficient information. An expert would not only secure uniformity by defining the methods of observation and record, but by central analysis of all results he would ensure that the facts recorded were assessed at their true value, and he would be better able to consider the influence and effect of associated problems.

Major Leonard Darwin, speaking of racial poisons, was inclined to doubt whether alcohol or syphilis ultimately affected the racial qualities of future generations; he thought there was ample ground for fighting these things without bringing in the question of racial poisons. On the question of sterilization of the unfit, he said that he was very familiar with and sensitive to the arguments which could be urged against it, in particular the almost unsurmountable prejudice of the public; nevertheless, it would be in many cases by far the most humane thing to do. He wished that a medical man would devote himself to experimental work on methods of sterilization, and would endeavour to discover whether x rays did not offer the most effective and least difficult procedure. He warmly supported the plea which Dr. Howarth had made for a statistical department in the Ministry of Health to deal with social questions, and also urged that the influence of hereditary and environmental factors should be more carefully studied in the medical schools.

Dr. C. W. Saleeby urged the establishment of a permanent anthropometric department under Government auspices; indeed, he regarded such a department as a fundamental piece of structure in the Ministry of Health. He referred to some recent work carried out at the Johns Hopkins Hospital in the United States in which, out of a very large number of stillbirths, it was found that a considerable proportion—something like a quarter—were not to be explained by any known factor, syphilis and other conditions having been excluded. This suggested to his mind that there was still a great deal to learn about ante-natal conditions, in particular the dietetics of the mother.

CLINICAL DEMONSTRATION.

At a meeting of the Midland Medical Society held on November 12th at Birmingham, with Mr. Arthur Loxton in the chair, a number of interesting cases were shown.

Intensive Iodine Treatment in Skin Tuberculosis.

Mr. Russell Green showed two cases of tuberculosis of the skin illustrating the use of intensive iodine treatment. The patients were young adults who had recovered from multiple cutaneous tuberculous lesions after a prolonged course of vaccine and tuberculin therapy, combined with local treatment in the shape of x rays, radium, ionization, etc. After complete local recovery these patients developed crateriform ulcers, in one case on the calf and in the other case over the malleoli.

That the cases were tuberculous and not tertiary syphilitic was evidenced by:

(1) History: Case (*a*) father died of phthisis. Case (*b*) "Tuberculous panophthalmitis when a child; removal of eye." (2) Associated tuberculous lesions, scrofulodermia, lupus vulgaris, Bazin's disease. (3) Laboratory findings: Wassermann reaction negative at the commencement of treatment, and remaining negative to repeated tests. Opsonic index to tubercle bacillus 0.6 and 0.65 in the two cases respectively.

The crateriform ulcers were resistant to all forms of local treatment until the patients were given a course of intensive iodine, when they yielded to the local treatment to which they were previously non-responsive. The speaker outlined the intensive iodine treatment as described by Curle of Glasgow:

The patient is given 25 grains of potassium iodide at 7.30 a.m.; this is followed two, four, and six hours afterwards by 1 oz. of chlorine water. The chlorine water is made in the usual way. Two drachms of powdered potassium chlorate is put into a 40 oz. bottle and 1 drachm of strong hydrochloric acid is added; the bottle is tightly corked, and chlorine allowed to generate; water is slowly added to 40 oz. One ounce of this is given in a tumbler of lemonade, which method of administration goes a long way towards disguising its unpleasantness.

Mr. Russell Green explained the theory of the action of this remedy thus:

When a small dose of potassium iodide is administered it is decomposed by the blood into free iodine and a salt of potassium is formed. This power of decomposing potassium iodide is strictly limited, so that if a further dose of iodide be added it is

not decomposed, but renders the blood plasma capable of holding the free iodine in solution. The intensive iodine treatment aims at increasing the decomposition of iodide, whilst at the same time providing excess of potassium iodide to ensure its complete solution, so that the tissues are bathed in a fluid containing a large amount of free iodine. When free iodine is present and is not held in solution it tends to be excreted by the mucous membranes of the respiratory passages, giving rise to "iodism."

Cavernous Sinus Thrombosis.

Dr. EMANUEL reported a case of thrombosis of cavernous sinus in a boy aged 13, who was previously strong and healthy, with proptosis of seven weeks' duration and nearly complete fixation of both eyes. It had commenced with swelling of the left upper eyelid, followed a few days later by swelling of the right. He was able to remain at school for a fortnight, and came into hospital five weeks after the onset.

On admission the patient was drowsy, both eyes were proptosed and fixed, with axes slightly divergent. The eyelids were oedematous and the conjunctivae congested. Vision was much impaired—right $\frac{6}{36}$, left $\frac{6}{18}$. All the external ocular muscles were paralysed, but the upper eyelids could be moved, and both pupils reacted to light directly and consensually. There was no optic neuritis, but engorgement of the retinal veins. The conjunctival reflexes were active. A week previously headache, giddiness, and vomiting of a cerebral type were noted.

The drowsiness, proptosis, and congestion increased for a few days after admission, and then began to subside. Vision had become normal, and the movements of the eyes were being re-established. There was every reason to anticipate complete recovery. No cause for the condition had been found.

Foreign Bodies.

Mr. CHRISTOPHER MARTIN showed a specimen of a concretion formed around a pin in the appendix which had ulcerated through into the bladder.

Mrs. E. A., aged 27, was first seen in June, 1918. For three weeks she had had fever, intermittent pain in the right iliac fossa, and symptoms of cystitis. On examination, there was a hard fixed mass in the right iliac fossa about the size of half a lemon. The urine was thick and offensive, and contained pus and *B. coli*. The abdomen was opened on June 22nd, and, after separating the adhesions, an abscess was found involving the appendix and the right side of the bladder. In the tip of the appendix was a concretion containing a pin. The point of the pin was projecting into the bladder, and the head of the pin was still in the appendix. The appendix, together with the concretion, was removed, the opening in the bladder sutured, and the abscess cavity drained. The bladder was drained with a self-retaining catheter. There was some urinary discharge through the wound for some days, but this finally ceased. The wound closed, and the patient went home on July 26th.

The concretion, when removed, was a pear-shaped mass about 1¼ inches long and ½ inch broad. The point of a pin could be seen projecting from the narrow end of the mass. A radiograph showed the head of the pin embedded in the thickened end of the concretion. The pin had evidently been swallowed, passed into the appendix, and a concretion formed around it which gave rise to acute appendicitis. An abscess outside the appendix formed, which burst into the bladder. Had an operation not been performed, in all probability the whole of the concretion with the pin would have worked its way into the bladder and formed a urinary calculus.

Mr. BECKWITH WHITEHOUSE showed a specimen, consisting of half a bone knitting needle, removed from a married woman who had introduced it through the uterine cavity for the purpose of procuring an abortion. The patient's history was as follows:

The catamenia, previously regular, ceased in August, 1918. Thinking that pregnancy had occurred, she introduced a bone needle into the uterus on October 26th. Upon withdrawing the instrument it was noticed that half had been retained. Considerable pain occurred, and she consulted her medical attendant, who explored the uterus at once, removed a two months' pregnancy, but failed to find any foreign body. No immediate complication occurred and the patient made a sound recovery. The catamenia were resumed five weeks after the curetting. At the end of December, 1918, the patient noted abdominal pain, especially on bending, and she was referred by her medical attendant for further examination. A radiograph revealed the shadow of an elongated foreign body lying within the abdominal cavity. Laparotomy was performed on January 18th, 1919, and the missing half of the needle removed from the peritoneum. The foreign body was completely enveloped by omentum, but no wound of the viscera was noted. A scar was present at the fundus of the uterus, marking the point of entry of perforation. The patient made an uneventful recovery.

Mr. SEYMOUR BARLING showed a case of diaphragmatic hernia following an abdomino-thoracic gunshot wound which was cured by operation.

CINEPLASTIC AMPUTATIONS.

THE annual meeting of the British Orthopaedic Association was held in the rooms of the Medical Society of London on November 14th, under the presidency of Mr. E. MUIRHEAD LITTLE. After the delivery of the presidential address a discussion was held on cineplastic amputations.

The PRESIDENT, in his opening remarks, said former methods of producing movements in artificial hands and fingers depended upon efforts made by the upper arms and shoulders; an elaborate example of this was seen in the Carnes's arm. Dr. Vanghetti performed many operations on fowls, and during the last twenty years his writings had stimulated surgeons to put his principles into practice. Mr. Little referred gratefully to Professor Putti's lecture published in this country last year.[1] The various kinds of motors could be divided into the club and the loop. In the former class were the motors which were meant to be connected with the prosthesis by their peripheries, and in the loop class were those connected by their inner and more central surfaces. He described a number of devices, remarking that in his somewhat limited experience the club motor with osseous nodule in the end gave the greatest promise of usefulness; it was better fitted to stand the pressure of the attachment than was the tunnel, and it could be better planned to stand a large range of movement. The following he regarded as the desiderata in a plastic motor:

Sufficient muscular power, well nourished and innervated skin covering, ample range of movement, sufficient length and thickness, appropriate surface for counter-pressure covered with well nourished and resistant skin.

The last named was important, otherwise the patient's efforts might expend themselves in simply pulling the socket of the prosthesis further on to the stump. The range of movement in the upper extremity should be at least one inch. In the case of two motors being employed for two movements the range should be nearly the same in both. He thought it easier to get a good range of movement with the club than with a tunnel, for the distal side of a tunnel, especially if it was in a tendon, was apt to be bound down. The amputation sites suitable for cinematization were, first, those so close to a joint that the segment below the articulation was of no use for working a socket. Secondly, stumps which were too long, after amputating through joints, could well afford to lose an inch or two to make plastic motors.

Major ALWYN SMITH dwelt on the great importance of keeping industrial efficiency in mind when planning an operative procedure. He gave an account of the history of his efforts in South Wales and the methods he had so far adopted.

Major M. FITZMAURICE-KELLY said one had to be guided in every case by the particular material at disposal. His experience had been that, whenever it could be got, a "clava" type of motor was by far the best. Club motors, he considered, had the best chance of surviving, for there was a concentration of the whole power of the muscle at one point. He did not think prosthesis could be expected to happen until the forces were surgically produced for the instrument maker to apply. Orthopaedic surgeons must solve the surgical problem, and leave the mechanical problems to the engineers.

Mr. A. S. B. BANKART related two failures he had had through operating on too small a scale, and he was anxious that others should benefit from his experience. Large flaps must be used, and considerable masses of bone taken away in planning a properly formed motor.

Captain MAXWELL (Chief Arm Instructor, Ministry of Pensions), though not a surgeon, spoke of his experiences and hopes as one who had lost an arm many years ago, and as an officer with a wide experience at casualty clearing stations in the war. In the early days of the war many men were fitted with the artificial arm as soon as it was ready and at once turned into the world to do their best to earn their living again, without having been given any instruction as to its use or limitations. He advocated close consultation between surgeon and limb-maker, with the view of effecting such small improvements as seemed practicable.

Mr. ROWLEY BRISTOW said the great lesson brought back by those who visited Italy was the need for these cases to be segregated in orthopaedic centres or hospitals, where they were always in touch with the special surgical and mechanical opportunities. There was not yet room for self-satisfied feelings on this matter.

[1] BRITISH MEDICAL JOURNAL, June 8th, 1918, p. 635.

Habitual Shoulder Dislocation.

Mr. R. Ollerenshaw opened a discussion on habitual dislocation of the shoulder-joint. All the four cases on which his paper was based had had conservative treatment before he saw them, but none had been operated upon; one was an epileptic. The operative treatment resolved itself into three methods:

(1) Pleating the capsule; (2) exsection of a portion of the antero-inferior aspect of the capsule and narrowing it by overlapping the edges; (3) the deltoid flap operation.

He considered the muscle flap operation as the best of these, because it provided a good sling bracing the head and neck of the humerus, and a muscular sling which contracted actively when the rest of the deltoid was in action. He described the processes of the operation and discussed the pathology of the condition. He had not had any recurrence in his four cases, but he intended to make a report on them at some future date.

Captain Dunn said he had carried out different operations for recurring dislocations of the shoulder, and often after excision of a portion of the capsule the dislocation recurred. In one very obstinate case a Claremont was done without recurrence. In one case sepsis supervened, but the after-result was good.

Amputations in the Foot.

Mr. S. T. Irwin, in a contribution on amputations of the foot, divided the subject into the following heads:

1. Amputations of the toes.
2. Amputations in the foot proper, with special reference to Lisfranc's and Chopart's amputations.
3. Amputations in the vicinity of the ankle, with special reference to Syme's amputation.
4. Capacity for work after these amputations.

Where relief could be obtained with retention of the toe, as in hammer-toe, by excision of the joint, it was better surgery to retain the toe. Wherever possible the great toe in particular should be conserved. No amputations in the lower limb gave more disappointing functional results than did partial amputations of the foot, though the first effects seemed good. Hence he regarded the operation as suitable only as a primary amputation where conservatism was of the first importance. The main objection in all partial amputations of the foot was that the anterior pillar or the antero-posterior arch was shortened. The first effect of this was that the weight of the body, acting through the centre of the ankle-joint, and the support acting downwards through the posterior pillar of the arch, produced a complete rotation round a transverse horizontal axis lying behind the ankle-joint. Hence the heel moved upwards, producing a potential equinus. In the amputations preserving the insertions of tibials or peronei the deformity was not a true equinus. Several authorities had shown that the more the anterior limb of the antero-posterior arch was shortened the worse was the result, the greatest disablement following amputation through Chopart's joint. Also, in these amputations the scar, at first placed anteriorly, came progressively lower, until it lay on the ground. Elaborate fittings had been brought forward in France and Germany for restoring some elasticity to the gait, but those he had seen were unsuccessful.

Deformities and disabilities secondary to amputations in the foot could be combated to some extent by division of the tendo Achillis, by suture of the extensor tendons to the plantar fascia, and by producing ankylosis of the ankle-joint; but none of these measures gave satisfactory results, and the best course was to reamputate and convert a partial into a complete amputation of the foot. Chopart's and Lisfranc's operations should not now, he considered, be performed. Of the operations through the ankle-joint, James Syme's he regarded as by far the best; there were a number of objections to Pirogoff's amputation.

With regard to the results of amputation in the foot from the view-point of function, he exhibited a graph to indicate how this varied after amputations in the lower limb.

In a general way there was a fall in capacity for work as the stump became shorter, but there were secondary irregularities of great importance which should influence the choice of operation for a particular case. The chief variants were (1) the value of the ideal amputation at the given level, (2) the type of prosthesis appropriate to the amputations. Comfortable progression and capacity for work were diminished by amputation of the great toe; loss of other toes did not generally produce disability, though if possible they should be retained. After a Lisfranc there was a marked drop in the capacity curve, due to the shortening of the anterior portion of the arch and its consequent flattening; while the secondary changes were of even greater importance, due to the muscular action in trying to prevent deformity. There was a still further drop in the curve with Chopart's amputation. After a Syme amputation, however, there was an abrupt rise in the capacity curve, for it left a stump nearly perfect.

The President congratulated the author on the thoroughness with which he had dealt with the subject. The results of these later investigations bore out the recommendations of the surgeons at Roehampton, on which the memorandum issued by the War Office in April, 1916, was based. Those surgeons concluded that if one could not amputate in front of the anterior metatarsals, it was of no use to do anything in front of a Syme. He did not regard loss of toes as such a serious disability as Mr. Irwin did. Generally a Chopart was bad, but the great difficulty was in regard to an appliance. The more cases one saw, however, the less one was inclined to dogmatize. He had seen many unsatisfactory Syme's in military surgery, and a number of them had had to be amputated at the middle of the leg. The Syme was not popular with any apparatus, as there was much perspiration, and the leather rotted and the steel oxidized. His own seat of election would be the middle of the leg, that is, higher than Mr. Irwin chose.

Major Alwyn Smith agreed with the President as to the degree of disablement caused by loss of toes. He had reamputated fifteen inefficient Syme's. His selection of site would be ten inches from the tip of the tibia to the stump; there was no cyanosis, and a standard artificial leg could be used.

Mr. Aitken said that in many cases he had been able to avoid amputation by putting the foot on a hollow bar behind the tender end, in cases of trench feet. Mr. P. J. Verrall advocated the Lisfranc, or operation in front, if it were followed by provision of a support for the arch for spastic inversion of the foot.

Birth Paralysis.

Mr. H. A. T. Fairbank, D.S.O., in a communication on birth paralysis, discussed theories of causation, and said the traction theory best explained the condition in most of the cases, and that the subluxation of the shoulder-joint developed gradually as a direct result of the paralysis. The pathological lesion varied from a slight tear in the perineural sheath to complete rupture of the nerve trunk. In some cases the lesion was quite close to the spinal cord, or the cord itself might be injured by the uprooting of the nerves. Three clinical types were recognized—the upper arm, the lower arm, the whole arm, the first being by far the commonest. In treating the palsy, he always put the arm up with right-angle abduction and full external rotation of the shoulder, flexion of the elbow to a right angle, full supination, and, if necessary, dorsiflexion of the wrist. He used a splint made of tin, and twice daily the arm was taken down for massage and manipulations. The paper discussed the length of time after which operation should be attempted and the procedures to be followed.

Mr. Harry Platt (Manchester) dealt particularly with the type of lesion. Up to 1913 the conception of birth paralysis as a supraclavicular injury held undisputed sway. Since that date investigations of American and Continental authors had thrown some doubt on the correctness of this theory. At the present time, he said, there were two schools. The first considered that all cases of birth palsy were due to a supraclavicular lesion of the plexus, while the second school thought there was a primary injury of the shoulder-joint capsule, with secondary involvement of branches of the brachial plexus in close relation to the joint. Spontaneous recovery occurred in the vast majority of these cases, only a few needing exploration of the plexus. Posterior subluxation of the joint dominated the clinical picture of birth paralysis. Out of 23 cases he had had, there was spontaneous recovery in 20. He advocated conservative treatment in all cases for at least twelve months, the arm being fixed in the standard posture, with relaxation of the affected muscles. Exploration of the plexus should be reserved for cases showing no recovery after this period had elapsed and presenting the definite muscle atrophy characteristic of a complete nerve lesion. The posterior subluxation of the joint could be avoided in all cases if the standard position of splinting were adopted.

Mr. Rowley Bristow believed in delaying operation until the very last—for at least a year or eighteen months. He had found the electrical reactions of but little service to him in these cases.

Mr. R. C. Elmslie spoke of the need for orthopaedic surgeons to make up their minds on this subject. The nerve theory seemed to him to fall in very well with clinical observations. The cases of birth palsy seen in early infancy fell, clinically, into three groups: Those

which recovered very quickly—in many cases without treatment; those recovering more slowly—from three to twelve months; and those which either did not recover at all, or else only partially. He believed the last named scarcely existed, they were so very few. Those three groups accorded well with three presumed pathological conditions: (1) That in which there was injury to the nerve not involving rupture of axis cylinder; (2) that in which the nerve injury involved axis cylinder rupture; (3) a condition of injury of axis cylinders with degeneration of their ends. Cases of subluxation of the shoulder he regarded as nerve lesions, with a tendency to recover more or less rapidly, the slowly recovering cases ending in contracture. In these cases he always put the arm in the standard position. He thought highly of Mr. Fairbank's operation.

Mr. GIRDLESTONE advocated complete exposure of the brachial plexus with division of the clavicle, placing thus the whole plexus under observation; it also resulted in more mobility of the ends. Mr. AITKEN agreed with the principles laid down by Mr. Elmslie as to treatment, but he had never yet performed the open operation for subluxation or extreme internal rotation. Mr. FAIRBANK and Mr. PLATT replied.

Mr. W. H. TRETHOWAN gave a short demonstration on the use of silk to replace crucial ligaments; he considered the method promised well for arthroplasty in the knee. In the cases shown there was no antero-posterior displacement.

WAR EXPERIENCES.

THE first sessional meeting of the East York Division of the British Medical Association was held at the Royal Infirmary, Hull, on October 3rd, when Dr. TURTON was in the chair. The subject for the evening was war experiences.

The CHAIRMAN in his opening speech restricted himself to his medical experiences while in command of a stationary hospital in the Salonica command. Attention was first called to the difference in the class of case dealt with in Macedonia compared with the Western front. Of 15,000 patients admitted to his hospital during a period of under two years, no fewer than 10,000 were cases of malaria; 1,200 suffered from diarrhoea and dysentery, whilst only 177 were wounded. The number of cases of venereal disease was very small, as there were no facilities for infection. No cases of trench fever or trench feet were seen. Ten cases of the enterica group were admitted to hospital, and 45 cases of relapsing fever came under treatment. Notice was directed to the immediate effect of intravenous injections of galyl or salvarsan in this disease; single small doses of the drug—even 0.15 gram of galyl—were sufficient to effect a cure, with disappearance of the spirilla and freedom from relapse.

Malaria.

Dr. TURTON did not consider that the malaria was of a fatal type, in view of the fact that only six deaths from malaria took place in his hospital. The two different types of the disease were discussed, and it was pointed out that whilst the worst cerebral and hyperpyrexial cases were infections with the malignant or subtertian type, the greater number of persistently recurring cases were due to the benign tertian organism. The acute fulminating cases of the cerebral type were described, and in these, as well as in all the severer infections, the speaker admitted he was an advocate of immediate intravenous injections of the bihydrochloride of quinine rather than intramuscular injections or administration by the mouth. Hints were given to the members who might have to treat cases of malaria in returned soldiers, and the importance of large doses of quinine was insisted on. Arsenic was recommended in the more chronic cases. The speaker expressed himself strongly against the use of prophylactic doses of quinine, and expressed his opinion that antimalarial measures—such as the drainage of large areas and paraffin spraying—could only be worth doing if persisted in for many years and on a very wide area.

The different organisms of dysentery were discussed and the type of disease they produced. The work of a typical diarrhoea and dysentery compound was explained, and the use of antidysentery serum in acute and severe cases intravenously was advocated. The members were given useful hints on the treatment of the chronic cases of dysentery found in soldiers returning from the Eastern fronts.

Dr. EDWARD MARTIN spoke of slight cases of malaria and how far it was safe to let the patient back to work. It was very important to put him to bed and attend to the bowels until subnormal temperature showed no tertian elevations. There was no use in giving quinine until the bowels were got into good working order. Quinine in solution was far superior to powders and tabloids. Oil might be thrown on the streams to destroy the mosquitos.

Dr. O. L. APPLETON described his experiences at an advanced dressing station during action. Every case was put on the operating table, vessels were tied, and wounds were dressed; then, after being given food and injection of morphine, the patient was sent to the main dressing station, five miles away.

Dr. GILLESPIE spoke of the usual work of a regimental M.O. attached to an ammunition column. The most important thing here was looking after the sanitation. Every regimental M.O. carried a simple apparatus whereby he could test a stream for organic pollution, and also for simple metallic poisons. It was a weird sight to see men coming back suffering from mustard gas poisoning; he considered that a man who had once been seriously gassed must be permanently damaged.

Dr. THOMPSON bore out what Dr. Gillespie had said with regard to gas poisoning. The patients were much cyanosed and simply lay on the stretcher and poured out primrose-coloured mucus from the mouth and nostrils. Oxygen was administered.

Dr. GERALD DAVY spoke on the effects of heat in Mesopotamia, cases passing from the mild effects of heat into a more serious condition, and sometimes culminating in fatal heat-stroke. He considered that it was unjustifiable to say that all heat-strokes were due to malarial poison.

Dr. R. W. JONES discussed the classification of the psychoneuroses by both the modern English and the Freudian schools.

Rebiews.

THE FEEDING OF NATIONS.

MESSRS. LONGMANS have now issued in a handy volume[1] Professor STARLING'S Oliver-Sharpey Lectures on the feeding of nations. Since at the time of their delivery we published a summary of the lectures and also commented upon the principal topics, we need not again allude to matters of merely historical importance. But as Professor Starling raised issues of much more than historical interest, we shall not refrain from discussion because of the risk of repeating what has been said before.

Broadly speaking, the moral of Professor Starling's discourses was that a national food policy depends upon a scientific appraisement of (1) the quantity and quality of food required by the citizens of a nation, (2) an evaluation of the food actually available, (3) the determination of a physiologically economical method of making good gross deficiencies, (4) a plan of securing the detailed apportionment of the gross supply. In actual practice it was found that great calamities followed errors under the third and fourth headings. Both France and the Central Empires committed the mistake of not preserving an unrationed source of generally available energy—namely, bread—while the political considerations which led Germany, in disregard of the third condition, to waste energy by maintaining the head of live-stock, precipitated her ruin; had the war lasted longer, similar, if less grave, errors would have given rise to much inconvenience here.

At the present time the problem of food supply is not merely national but international, and the question is whether this larger problem is to be approached on scientific lines or to be obscured by a mist of sentimental rhetoric. In the appeals made to the public respecting the plight of the Central Empires much is said of the sufferings of women and children; we are told that it is offensive not only to Christian sentiment but to traditional British chivalry that our now helpless enemies should suffer for the crimes of their proscribed rulers. This doctrine is so strenuously enforced that some orators really seem to have persuaded themselves that the laches of the allied Governments is responsible for all the misery now being endured. In a mere wrangle the victory of those who do not accept this doctrine is easy, for they have merely to ask whose was the original fault that there is a world famine, who destroyed millions of tons of food, and finally to demand that no British, French, or Italian baby shall go short or perhaps perish that an enemy may be fed.

[1] *The Feeding of Nations.* By Ernest H. Starling, M.D., F.R.S. London: Longmans. 1919. (Pp. 146. 5s.)

Professor Starling pointed out in his lectures the effects upon the German population of food restrictions, and more recently he has supplemented the evidence there adduced. Physiologically the problem is perfectly simple. When the average supply of energy and of the other essentials of a diet falls below a certain minimum and is maintained below that minimum for a considerable period, consequences, both physiological and psychological, ensue which are incompatible with the maintenance of a civilized state. Whether that point has been reached in Germany is a question of fact. It is open to those who dissent from Professor Starling's conclusions on the issue of fact to carry out similar but more extensive investigations for themselves, but such investigations must be carried out on physiological lines and not delayed; there must be an end of the strophes and antistrophes of rhetoric. Were it capable of exact demonstration that to maintain social order and a normal economic life in Germany would necessarily involve, not merely privation, but actual death to numbers of our own countrymen by diversion of foodstuffs, the desirability of such a course, not for altruistic but purely selfish reasons, would have to be judged on arithmetical grounds. The question would be one of mere political arithmetic. On the one side we should weigh the immediate loss, on the other the blood and treasure swallowed up by an extension nearer home of conditions even faintly resembling those now dominant in Russia.

It is not our business to adjudicate on these matters, but it is our duty to point out that both the favourable and hostile criticism which Professor Starling's views have experienced has been almost wholly sentimental and rhetorical. Since the publication of his White Paper there have been floods of talk, but we have met with no scientific pronouncement either refuting Professor Starling's conclusions on the basis of a wider assemblage of facts or, in the alternative, explaining what steps have been taken to render less imminent the dangers to which he directed attention. We cannot accept as a satisfactory substitute the dispatch to Rome of a British Delegation no member of which is either a physiologist or a medical man.

TROPICAL MEDICINE.

THE main feature of the third edition of the well known work, *Manual of Tropical Medicine*,[1] by CASTELLANI and CHALMERS is its increase in size—2436 pages as compared with the 1747 of the second edition. This makes the book somewhat heavy to handle, and, as it is difficult to see how in future editions the matter can be cut down or condensed, the advisability of dividing it into two volumes might be considered by the authors and publishers.

To show the popularity which the *Manual* has attained it is only necessary to quote from the preface to the present edition that "the second edition of this manual went out of print some years ago." This made it incumbent upon the authors to bring out a new edition; it has involved the rewriting of large parts and the incorporation of subjects not previously treated. The illustrations have also been largely increased. Of notable omissions—made to keep down the size of the book—may be mentioned the list of figures and the index of authors' names.

The rules of the International Committee have been followed in the nomenclature of parasites. We note the substitution of the name "Loeschia" for "Entamoeba" in the section dealing with the amoebae in the protozoological part of the book, and it is possible that this and the retention of the so-called flagellate amoebae, *Craigia hominis*, etc., in the classification will be criticized by protozoologists. Dobell, Wenyon, and other English protozoologists do not believe that the latter is a good genus, and certainly till more proof of its existence is forthcoming it would be well to mark it as doubtful. The name *Vahlkamfia nana* does not harmonize with that proposed by Dobell, *Endolimax nana;* this is due probably to the fact that the authors had not had the chance of studying this authority's work before going to press. We are glad to see that in the description of the Treponemata the so-called life-history of the *T. pallidum* is omitted. This was purely hypothetical at its best, and was not recognized by many competent protozoologists. Another new departure—one which may give rise to much discussion and complications—is the new classification of the trypanosomes. Their classification has always been difficult, and the new nomenclature recently adopted by Dr. Chalmers will, we fear, not make it easier, and there may be considerable diversity of opinion about the advisability of adopting it.

Passing from the zoological side of the book to the clinical, we find much that is interesting and instructive. The new war diseases are discussed in a chapter entitled the "War Zone Fevers"—a happy term. Trench fever is suitably dealt with; to infectious jaundice the new name "icterus castrensis gravis" is applied, while camp jaundice is termed "icterus castrensis levis." The following chapter, "The Diagnosis of a Tropical Fever," well merits close study; it should help the beginner very greatly and put him on the lines he ought to follow. Space will not permit of further remarks on special parts of the book. It is enough to say that the high standard of the previous editions is kept up, and that the *Manual* will continue to serve in its dual capacity both as a book of reference and as a textbook for the student and practitioner in tropical medicine. An enormous amount of information on every tropical subject is contained within its pages, and the authors must be heartily congratulated upon their most recent effort. We predict that the day when another edition will be required is not far off.

[1] *Manual of Tropical Medicine.* By Aldo Castellani, C.M.G., M.D., M.R.C.P., and Albert J. Chalmers, M.D., L.R.C.S., D.P.H. Third edition. London: Baillière, Tindall and Cox. 1919. (Demy 8vo, pp. x+2436; 909 figures, 16 coloured plates. 45s. net.)

A PRACTICAL DICTIONARY OF TREATMENT.

SEVEN years ago we recorded the appearance of the fifth edition of WHITLA'S *Dictionary of Treatment*,[2] which had then been largely rewritten. The experience gained during the last five years fully justified Sir William Whitla in issuing a sixth edition at the present time, embodying the many new thoughts and suggestions that have been founded upon the observations of countless physicians and surgeons in every branch of military and civil service during the war.

The author has had some assistance from specialists with respect to articles on surgical, gynaecological, and ophthalmological treatment, but in other respects the whole work bears the impress of personal knowledge and experience.

Tested in every possible way, the new edition is found to supply the most recent information obtainable with regard to treatment in general. With the help of a very full index and the abundant cross references provided, no time need be lost in the search for information on special points. In all cases where no treatment can be of much use, no unnecessary space is taken up in recording the fact, but very full and sufficient accounts are given where good results have been obtained by varying methods. The views of many foreign therapeutists are duly recorded, some of them advising elaborate forms of treatment, requiring the exercise of much patience and unlimited confidence, but simple methods are preferred as a rule, and many time-honoured remedies still hold their own.

The publicity which has of late years been accorded to the treatment of venereal diseases gives additional value to the expert advice contained under the headings of gonorrhoea and syphilis. It is noted that in both instances there is no general agreement as to details of administration. Many methods have been tried, with varying success, to neutralize the activity of the gonococcus and the spirochaete *in situ*, and to subdue the virulence of the subsequent inflammation. The rough-and-ready astringent injections which in times past have too often served to extend rather than to check the mischief, have given place to more cautious proceedings, which are duly described in detail.

The call of his parliamentary duties does not appear to have interfered in any way with the author's careful revision of the work. Typographical errors are few and far between, and in every respect the latest edition of Whitla's *Dictionary* is worthy of a place on every medical bookshelf.

[2] *A Dictionary of Treatment. Including Medical and Surgical Therapeutics.* By Sir William Whitla, M.A., M.D., LL.D., M.P. Sixth edition, 32nd thousand. London: Baillière, Tindall, and Cox. (Demy 8vo, pp. viii + 1083. 25s. net.)

NOTES ON BOOKS.

IN reviewing the first edition of Dr. WEBB-JOHNSON'S book on *Painless Childbirth*[4] it was stated that it seemed addressed more to the Eastern market, and the notices appended to this new edition show that it has met with appreciation there. The additions render it, however, a source from which anyone may gather the general character of the debate that has taken place on the subject, and the details of the various methods of dosage are also given. The author himself describes a method of fixed doses. It may be of interest to note that a fully successful result has been achieved with hyoscine alone. Little that has been published seems to have escaped Dr. Webb-Johnson, except the notes in the BRITISH MEDICAL JOURNAL, 1915, vol. i, pp. 939, 1053, recording the fact that the method described by Ribemont-Dessaignes had on further investigation proved to be the administration of morphine in large doses.

The second edition of *An Atlas of Dental Extractions*,[5] by Mr. C. EDWARD WALLIS, should prove of value to general practitioners called to perform emergency dental operations. In haemorrhage after extraction the process of plugging the sockets is often painful; pressure applied by closure of the mandible on a large pad of lint or wool is more often than not sufficient to arrest the bleeding. Also in relation to pain after extraction, especially in septic sockets and foul mouths, it is wise to make a routine practice of daily syringing the socket rather than wait two or three days for the pain to arise and then start syringing.

Captain BAIRD has compiled an *Ex-Officer's Handbook*[6] for the use of ex-officers, widows, dependants, and nurses. The object of the pamphlet is to act as a finger-post to the various sources—official, semi-official, and voluntary—from which benefits may be obtained. The official rules and regulations can be found in the publications referred to under each heading. This little handbook should be most useful. The information as to voluntary organizations might perhaps have been given in rather greater detail, and the arrangement of the paragraphs might well have been alphabetical, but as the whole pamphlet is so brief this latter drawback is not serious. Under "disability retired pay" a definition of "undue delay" might be useful in the revised edition of a more comprehensive kind, which, we understand, is in course of preparation. The need of such a compilation becomes evident when we read that on the books of the Ministry of Pensions there are 33,000 officers, 9,600 widows, 900 nurses, 9,100 children of officers, and 5,600 other dependants. There is little doubt that many of these are not drawing their full awards. Again, on the books of the Ministry of Labour there are said to be 20,000 ex-officers and other ranks of similar educational qualifications seeking employment.

That difficult subject, the education of boys and girls in matters of sex, is set forth in a mixture of fact, folk-lore, and allegory by Mr. GOULD in *Health and Honour*.[7] The book is well written, and may serve its purpose.

[4] *Painless Childbirth and Twilight Sleep.* By Cecil Webb-Johnson, M.B., Ch.B. Second edition. Calcutta and London: Butterworth and Co. 1919. (Demy 8vo, pp. xviii + 169. Rs. 4 net.)

[5] *An Atlas of Dental Extractions.* With Notes on the Causes and Relief of Dental Pain. By C. Edward Wallis, M.R.C.S., L.R.C.P., L.D.S. Second edition. London: J. and A. Churchill. 1919. (Roy. 8vo, pp. 26; 11 plates. 5s. net.)

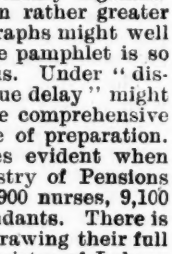
[6] *Ex-Officer's Handbook for the General Guidance of Ex-Officers, Widows, Dependants, and Nurses.* Compiled by Captain H. H. Baird, D.S.O. London: The Imperial Ex-Service Association. Price 3d.

[7] *Health and Honour.* Sex Light for Younger Readers. By Frederick J. Gould. London: Watts and Co. 1919. (Cr. 8vo, pp. 72. 1s. 6d. net.)

APPLIANCES AND PREPARATIONS.

A Mastoid Retractor.

MR. B. SEYMOUR JONES, F.R.C.S., Honorary Surgeon, Birmingham Ear and Throat Hospital, writes: I have devised a pattern of self-retaining mastoid retractor which possesses the advantage that it exerts a constant tension; this tends to prevent it from slipping out. In the event of it so doing during operative manipulations it can easily be replaced by pressing the arms together. The spring at the top is detachable, and can be renewed on application to the makers, Messrs. Mayer and Phelps.



CHARING CROSS HOSPITAL MEDICAL SCHOOL.

THE annual prize distribution at Charing Cross Hospital Medical School was held on November 19th, with Lord DEWAR in the chair. The report for the academic year was read by the Dean, Dr. W. J. FENTON, and an address was given by Sir AUCKLAND GEDDES, K.C.B., M.D., President of the Board of Trade.

Address by Sir Auckland Geddes.

He said that those who, like himself, had taken part in the National Service organization enjoyed exceptional opportunities of getting to know the mental habits of the medical profession. One lesson they learnt was that the medical profession was extraordinarily unequal, not only in its technical knowledge, but in its public spirit. It achieved a glorious record in the war, but he did not think it was realized that that fine record was won for the profession as a whole by a minority of its members, because there were a number of people now sharing in the glory who had done absolutely nothing to help. In all professions there was a certain sprinkling of self-centred persons, but it had seemed to his colleagues and himself (who perhaps were able to appreciate more fully than others the lesson there was to be learnt) that the medical profession possessed a much larger share of such individuals than it ought to have had. While not wishing in any way in anything he said to reduce the real glory the profession had won, it was well at a time like this to face the facts. Speaking as one who had taught at a good many medical schools, he knew how limited the whole outlook was. In some schools the teaching was scarcely more than technical instruction with very little of education about it. There was a vast difference between the two things. This state of the educational side for twenty years before the war had, in his view, led to some of the rather deplorable exhibitions during the war; that was why so many men failed to rise to the height of the occasion when a great occasion came to them. It was, however, a thing which could now be put right. In the medical classrooms a sharpening and development of the power of the student's mind was going on, altogether apart from the mere stuffing of it with information. The students themselves had the power to turn the instruction given to them into matter for their mental education. The teachers could only act as fingerposts to indicate that there was a path in this or that direction to be explored; the determination to explore and the exploration itself must come from the students. Every student and practitioner should go through life aspiring to do something to make the whole body of the profession equal to the reputation gained for it by the best men in it. If they did that they would serve their day and generation well.

The Annual Dinner.

On the same evening the annual dinner of past and present students of Charing Cross Hospital was held in the Adelaide Hall, at Gatti's Restaurant, under the chairmanship of Dr. WILLIAM HUNTER, C.B. The chairman, in proposing the Hospital and Medical School, spoke of their foundation a hundred years ago by the far-sighted philanthropist, Benjamin Golding. The toast was responded to by Dr. FENTON, who referred to the reorganization of the pathological department for teaching and research, and to the complete success with which the doors of the hospital and school had been opened freely to women students on an equal footing with men. The health of the guests was proposed by Mr. JOHN H. MORGAN, C.V.O., and responded to by Sir HAYWARD WHITEHEAD, K.C.B., Professor W. D. HALLIBURTON, F.R.S., and Sir WALTER FLETCHER, F.R.S.; and the chairman's health was proposed in appreciative terms by Lord DEWAR.

THE trustees of the Western Reserve University, Cleveland, Ohio, have voted an increase of 20 per cent. in the salaries of the entire full-time teaching staff of the medical school. The trustees of Vassar College for Women, Poughkeepsie, New York, have raised the salaries, the increase ranging from 50 per cent. in the lowest grade to 12½ per cent. for full professors. The salaries of the teaching staff of the University of Mississippi have been uniformly raised by about 50 per cent.

British Medical Journal.

SATURDAY, NOVEMBER 29TH, 1919.

THE MEDICAL RESEARCH COMMITTEE AND THE UNIVERSITIES.

THE Medical Research Committee will always be memorable because its formation was the first occasion on which the State recognized that scientific research was of importance for the national health. That flash of intelligence was inspired by Mr. Lloyd George; and what with the Ministry of Health, and the Committee for Scientific and Industrial Research, and one thing and another which that gentleman is foisting upon us, if the State is not extremely careful it will find itself acting like an intelligent person, instead of like a miserly idiot as has been its fixed habit hitherto.

The work put out by the Committee during the war has been remarkable. It turned at once to every subject as it came up: cerebro-spinal fever, gas gangrene, asphyxiating gases, flying conditions, are only some of the main problems which it has attacked. It helped medical men in France, not only by the supply of instruments of precision, but also by producing a great improvement in note-taking and recording in the R.A.M.C., and by becoming the channel through which some important papers were given to the world. It has likewise taken charge of the statistical work of the Corps. The members of its permanent staff have meanwhile been steadily pursuing researches—bacteriological, chemical, physiological, and clinical. Its mere results have been of the greatest value, or—to put it in such a way that an M.P. can understand it—it has paid for its keep over and over again.

But it is probable that the most important thing about a man or a body is not what he or it does, but in what spirit he or it does it, and there is a great deal to be said in favour of making people think rightly, even at the risk of a little torture or burning now and then, and not being too fussy over their mere actions; even a common judge pays attention to motives. This line of thought is most of all important when a body has the power of becoming such a rock of offence that the greatest services that it might perform for humanity would not quench the loathing felt for it by its fellow workers in the same great cause. Such a course was open to the Committee; such a bait was almost held to its nose by the terms of its constitution. It is to its lasting credit that while it has set many tasks before itself, its chief and highest aim has always been to make itself felt not more by the work done in its own laboratories than by the help, the encouragement, the spirit of fellowship in a great service which it has freely given to young scientific men in every university laboratory throughout the kingdom. There is not one of their laboratories but has some willing and eager young man—and not always so young neither—who is being financed wholly or in part by the Medical Research Committee.

What might have been? The Committee might have involved itself in its own virtue and confined its work to its own laboratories. It evidently very nearly did make the fatal mistake of running a hospital of its own. It might, again, have taken up some special line of work, and become a collection of great but narrow minds absorbed in contemplating some small part of pathology; or it might have sworn by Paul or Apollo, and have helped only the cherished students of one of these philosophers, have been ruled by some dogma, or have cleaved to some one method.

What has been? It has, indeed, its own laboratories and its own staff, who work or will work in the Mount Vernon institution apart from this troublesome world; and very fine work they are doing. But it has made itself the channel through which a large part of £60,000 a year fertilizes discovery in its natural fields—the universities—and thereby has very great influence upon the teachers, the students, and the whole atmosphere of seats of learning. It has done this deliberately, and it professes its intention of continuing to do so. And, further, by this course of wise and enlightened liberality it has opened to itself a task in organizing and combining research which much needed to be undertaken. Without any pretence at interfering with the proper autonomy and individuality of scientific men, it has been able to interest them in subjects worthy of attention and, when the subject required it, to direct many minds upon aspects of the same problem. It has given a sense of combination and of common work which is of great benefit to pathology and pathologists. Lastly, it upholds to the utmost the claims of freedom in research. It is never weary of preaching that the direct attack upon a difficult problem is seldom the most fruitful, that discoveries come in the most unexpected way, and enter by doors that were never anticipated. It speaks with authority, and that authority is always used to insist that men with the capacity to do the work must be helped in whatever work they feel drawn to do. No calculation of immediate results, no direct effort to find a definite answer, is so likely to advance knowledge as the free and unfettered working of thoughtful and inventive minds.

The Committee bewails that its means have sunk with the value of money to half what they would have been. It is changing masters and it is asking for higher grants. There are a few horses, and scientific research is one of them, on which the nation can put its money with complete safety. We wish the Committee may find in the Privy Council a master even more liberal and even more enlightened than it has had in the past.

THE PREVENTION OF INFLUENZA.

IN the light of the fatality of the pandemic of 1918 and the recently reported recurrence of influenza the prophylaxis of the disease is naturally much discussed, and protective inoculation with vaccines is highly fashionable. It was therefore appropriate that Sir Thomas Horder should take the preventive treatment of influenza as the subject of his British Medical Association Lecture at Southampton on November 13th. From the full text published in this issue (p. 695) it will be seen that he considers that the most potent means of preventing the spread of the disease when once epidemic would be a proper system of hospitalization, and he outlines a scheme whereby several large hospital units would be established in different parts of the country for prompt mobilization when need arises. He goes on to suggest that not only should cases of influenza be thus segregated from the community, but that a selective isolation of the influenzal patients either on clinical or bacteriological grounds might be carried out on a principle which

was, so far as we are aware, first applied in the treatment of measles and whooping-cough in the Hospice des Enfants Assistés in Paris. The principle was tested in the prevention of the pulmonary complications of influenza by the American Medical Service in France. It consists in the separation of patients with pneumonia or with a streptococcus or one of the types of pneumococcus in their sputum, from the uncomplicated cases, among whom the incidence of pneumonia has been reduced to under 1 per cent. (Longcope).[1] Sir Thomas Horder suggests that the method could be used in general hospitals in the country, but he asks that a few of the segregation hospitals he proposes should remain in commission between the epidemics so as to be available for study and the treatment of sporadic cases. He looks to the Ministry of Health to inaugurate this scheme at once.

The segregation of patients when the disease has broken out is of course much inferior, at any rate in theory, to prevention of the entry of the infection into a country. Quarantine at the ports, to which Sir Thomas makes a passing allusion only, was adopted in Australia last year on a very extensive scale, and the results have recently been recorded and discussed by Dr. Cumpston, Commonwealth Director of Quarantine.[2] Early in October, 1918, it became obvious that the disease had progressed in its march round the world to such an extent as to endanger Australia, and the quarantine officers were directed to order into quarantine any vessel on which the disease had broken out during the voyage. A few days later a severe and virulent epidemic was reported in Cape Town, and it was then decided that all vessels, whether infected or not, from South Africa, New Zealand, and some of the Pacific islands should undergo quarantine detention for seven days for observation, and that vessels from other countries should be detained only if infected. In the case of vessels with the infection in an active state the contacts were inoculated with the Commonwealth pooled vaccine (*B. influenzae*, *Micrococcus catarrhalis*, pneumococcus, streptococcus, and a Gram-positive diplococcus (not the pneumococcus) isolated from all the cases examined); this, it was considered, had a beneficial result. The maritime quarantine regulations were continued until April, 1919. During October, November, and December, 1918, there was a very virulent epidemic in very many other countries, but influenza did not seriously invade Australia until January—that is, not until four weeks after the arrival of the last ship known to be infected. The escape of influenzal infection through the quarantine line of defence was thought improbable, and it is suggested that the influenza in Australia, which is described as relatively mild, was the product of a slow evolution of that prevalent in July and August. No other country adopted quarantine, and the figures contrasted are as follows: South Africa and New Zealand experienced epidemics that ran their course in eight weeks; they were responsible for a total mortality rate of 826 per 100,000 in South Africa (among Europeans alone), and 517 per 100,000 in New Zealand, whereas in Australia the outbreak was long drawn out, lasting more than four months, presenting some clinical differences and never rising in any state above a maximum weekly death rate of 33.5 per 100,000; in Victoria the weekly rate was as low as 18.7 per 100,000. There was never anything, it is said, in any way comparable to the severe form of the disease seen in South Africa or New Zealand; at the same time a death rate of 33 per 100,000 a week, if continued for four or five months, would produce a total mortality as high as that recorded in New Zealand, though the weekly rate was little over half as high. From the experience gained from ship epidemics Dr. Cumpston concludes that the outbreaks cannot be stopped by inhalation, inoculation, or isolation of the sick, that exhaustion of susceptible material plays but a small part, and that the factor determining the course of the epidemic is the inherent nature and vigor of the infecting agency; he appears to suggest that the postponement and spacing out of the epidemic may have been in this way advantageous.

The effect of the quarantine measures enforced in Australia calls for careful investigation, but the difficulty in making a decision as to their value is considerable, owing to the eventual outbreak of influenza on an extensive scale. Their success for the first three months must be admitted, and would justify the hope that with the lessons learnt on this occasion the procedure might possibly, under suitable conditions, be more successful in a future emergency. It is a natural question whether this plan, with its drastic contingencies, could be applied to this country. Quarantine in the strict meaning of the term is not enforced at ports in Great Britain, even against those diseases—cholera, plague, and yellow fever—to which the port regulations for the control of ship-borne diseases apply. Under these regulations persons suffering from these diseases are isolated, and an attempt is made to keep track of "contacts." The system has been conspicuously successful so far, but its application to influenza would present enormous practical difficulties in a country with regular daily lines to many Continental ports, and with a disease often so mild and presenting symptoms so little characteristic as influenza.

There is a noteworthy contrast between the extensive use of prophylactic vaccines in practice and the cautious expression of bacteriological authority acutely conscious of the doubt as to the rival claims of a filter-passing micro-organism and of *B. influenzae*. For example, Dr. F. S. Lister,[3] who obtained such remarkable results in prophylactic inoculation against pneumonia in the Rand miners, considers the question hardly worth while discussing until many fundamental points in connexion with the immunological possibilities of the *B. influenzae* are worked out. Various arguments are, however, advanced for their employment; it is urged that though the original infection may be unaffected, the risk of complications due to secondary invaders, such as pneumococci and streptococci and Pfeiffer's bacillus, if indeed it be a complicating and not the specific organism, is diminished; that catarrhs and other infections disposing to influenza are thus prevented; and (as Dr. W. J. Penfold, probably from his former association with Dr. E. C. Hort, suggests in the Australian report) that *B. influenzae* is the specific organism, but has a filter-passing stage. Penfold found that the use of the Commonwealth vaccine was associated with a decided fall in the case mortality, the ratio of deaths in the inoculated and non-inoculated groups being as 5 to 24. Although some part of this improvement is attributed to the earlier hospitalization of the inoculated, these results appear to be in favour of the hypothesis that inoculation protects against complications rather than against the incidence of the disease.

[1] W. R. Longcope, *Proc. Roy. Soc. Med.*, 1919, xii. 66.

[2] Commonwealth of Australia, Quarantine Service, Service Publication No. 18. By J. H. L. Cumpston, M.D., D.P.H., Director of Quarantine. 1919. (Pp. 176.)

[3] F. S. Lister: Publications of South African Institute for Medical Research, 1919, No. 12, p. 7.

PROFESSIONAL UNITY.

A correspondent, grieved by the internecine conflicts in the profession, sends us some of his reflections in the following paragraphs: Some men are born to unity, some would achieve unity, and some must have unity thrust upon them. Those who are born to unity may live to enjoy it, and those who must have unity thrust upon them are gathered in the net of the thruster, but those who would achieve unity seem nowise able to agree on the manner after which it may be sought. One offers the bludgeon of the trade union, one shows the mass of a free democracy, and one tenders the fine point of a compound oligarchy of oligarchies; while some extol the former pair high on the right hand, and others praise the latter pair as high on the left. In one beset by doubts amid undoubters wonder may at times arise whether the manner is of this importance and whether the clamour of these rivals shows no trace of the huckster. Where all worship the same ideal there will be no disunion. Over the door of our shrine glows the blazon, "The Honour and Interest of the Medical Profession," but who shall show forth its image and how shall its dogma be formulated? The construction of creed has ever been a tool for the discomfiture of a heretic, and, victory won, the creed has been a millstone on the neck of the victor. Could we leave the vision of the ideal to the colour of each man's fancy, there would still remain the practical issue of "what must we do." The determination is surely a matter of business and not of speculation, and the method proper to such an inquiry will show which immediate purpose is shared by the greater number and can set the greater mass in movement in its pursuit. Notwithstanding its inherent defects the method of a democracy seems the most fitted to yield this result. If this be applied to the definition of the proximate objects of the largest group of the profession, some friendly barter might combine for their attainment the *Stosstruppen*, the massed army, and the guerilla. If all roads lead to Rome, travel how we may, Rome may be our rendezvous.

THE LEISURE OF THE PEOPLE.

A National Conference on the leisure of the people was held in Manchester on November 17th to 20th, the arrangements being made by the Manchester and Salford Temperance Council, which is composed of thirty-four affiliated bodies of social workers. The idea underlying the conference was that as the hours of leisure of the people increase many suggestions as to the right use of leisure arise, so that the present is a good opportunity for social workers to confer. Representatives were invited from county councils, trade councils, and societies engaged in social work throughout the country. It is impossible here to give more than the barest summary of the numerous suggestions made. One idea was the provision of municipal winter gardens, including a café, reading-room, library, places for games, and even a repertory theatre. Another speaker was enthusiastic about the influence of music, not only in the home but in the workshop during the intervals of work. Village musical festivals were suggested, and the Government and municipalities were to be harried for financial support. Attention was given to the use of boys' clubs and the place that juveniles should fill in schemes for the better use of leisure. The subject of holidays was also discussed, and the ideal holiday was represented as one which led people away from the crowded holiday resorts to quiet places where a simple life could be lived in close contact with Nature. It was suggested that some of the now disused military camps might be reserved as holiday centres for boys and girls. Mr. G. Lansbury put in a plea for more leisure for housewives and better and more roomy houses. He expressed the feelings of many when he said that the people do not want their leisure time managed by others, but they do want more freedom and opportunity. The Lord Mayor of Manchester gave statistics as to the enormous use that is made of the public parks and playing fields, which he said had amply repaid their cost. A representative of the Boy Scout movement urged that in addition to public parks the authorities should secure places in the wilder parts of Derbyshire and Cheshire which should be used as camping sites. At the close of the conference it was resolved to form a small committee to consider means whereby the exchange of ideas as to the best use of leisure could be continued and be at the service of all social workers. Throughout the conference it was recognized that there is a great social revolt against a return to pre-war conditions of life, and that there is a demand for a new and a brighter world, with more time spent in recreation and less in humdrum work. It may, perhaps, be doubted whether the enthusiasm of some of the speakers for their own particular ideas as to how leisure should be used did not overshadow the means by which productive work might be made, not humdrum and monotonous, but in itself a source of pleasure as well as of profit.

ACCESSORY FOOD FACTORS.

The issue by the Medical Research Committee of a Report on the Present State of Knowledge concerning Accessory Food Factors (Vitamines),[1] compiled by a committee appointed jointly by it and the Lister Institute, is opportune. As is said in the introduction, some scepticism on the subject was natural, because until a short time ago it seemed very unlikely that substances playing a prominent part in nutrition could have eluded discovery until within the last ten years. Though there is at present no certain knowledge concerning the chemical nature of the accessory food factors, or vitamines, the facts available compel belief in their reality and importance. As their chemical nature is unknown, so also is their mode of action. It may be that, small though they are in amount, they are essential constituents of the cell; on the other hand, their mode of action, as perhaps seems more probable, may be dynamic and catalytic—that is to say, they are stimulants of action rather than structural units. The analogy of hormones may suggest itself, but vitamines differ not only in being present in, it would appear, much smaller proportions, but also in that they are not manufactured by the animal body, being derived by it from the vegetable kingdom, either directly or indirectly. One of the most remarkable facts observed by all experimenters in the case of birds and mammals suffering from what is spoken of as polyneuritis, evidenced by severe and extensive paralysis owing to deprivation of the water-soluble B vitamine, is the extraordinary rapidity with which the animal recovers when given the missing body. The report contains photographs of a young rat suffering from a deficiency of water-soluble B. There was no co-ordination of the movements of the hind quarters, and the animal was unable to use its hind legs. Twenty-four hours after a dose of yeast extract, containing the water-soluble B vitamine, had been given by the mouth, the animal was able to walk about with ease. Similar observations have been made on pigeons suffering from polyneuritis gallinarum. The first hint of the existence of vitamine was obtained in connexion with this water-soluble substance. It was furnished by Eijkman, who in 1897 was medical officer to a prison in Java, where beri-beri cases occurred. He noticed that the poultry of the establishment showed paralytic symptoms, strangely reminiscent of those of his patients, and died with extensive degeneration of the peripheral nerves. The fowls were largely fed upon the rice refuse of the prison, and this fact suggested to Eijkman that the disorder of the human inmates might also have a dietetic origin. Long before this—in fact,

[1] Medical Research Committee. Special Report Series, No. 31. H.M. Stationery Office. To be obtained through any bookseller. (Price 4s.)

nearly a century and a half earlier—it was recognized that scurvy was due to a defect not in the quantity but in the quality of the food, which was traced to the want of fresh vegetables. Modern research leads to the view that scurvy is due to the absence of an accessory factor found in nature associated with living tissues in which metabolic processes are still proceeding; for instance, it is present in raw cabbages, and in fresh lemon and orange juice, in large amount. It is present also in much smaller proportion in fresh meat and milk. When the active processes cease, or are greatly reduced, as in seeds, or when vegetable tissues are dried or heated, the antiscorbutic vitamine diminishes until it altogether disappears; in seeds it is created anew during germination. Extensive and careful experiments on the protective value of various foodstuffs against scurvy have been made at the Lister Institute; they confirm and extend previous observations. Next after the raw cabbage, and the fresh juice of the lemon and orange, come the juice of swede turnips, germinated seeds (lentils), and cooked cabbage. Dried vegetables and fruit are practically useless. The observations made with regard to rickets are very striking, and the facts were not foreshadowed save by the belief that rickets was in some way connected with an insufficient supply of fats, and by the remarkable effect produced by the systematic administration of cod-liver oil. It appears now that certain animal tissues containing fat possess an accessory factor, known as the fat-soluble A factor, the absence of which is followed by rickets. It is contained in largest quantity, among substances hitherto examined, in butter and cod-liver oil. It is present in considerable quantities in cream, animal fats, and in fish oil; also in the liver, kidneys, and the heart. It is absent from lard, and from vegetable oils, so that it is usually not present in margarine. It is contained in the germ of wheat, in linseed, soya beans, and haricot beans; also in cabbage, spinach, raw carrots, bananas, and nuts. A deficient amount of this accessory factor in the diet interferes with the calcification of the teeth, which in man goes on until the eighteenth year at least. The effect of the absence of one or more of the accessory food factors may be aggravated by a diet defective in quality in some other respects, or in quantity, and in the last chapter of the report, dealing with pellagra, Wilson's opinion that that disease is to be attributed principally, if not entirely, to a defective protein supply in the diet, appears to be accepted. In rickets, bad housing conditions and want of sunlight may aggravate a tendency primarily due to the absence of the fat-soluble factor, and the onset of scurvy may be hastened by prolonged over-exertion. Professor Gowland Hopkins has recently presented the main facts in his lecture on the practical importance of vitamines, published in the JOURNAL of April 26th, and an interesting discussion on the subject is reported this week (p. 707). Further, we hope shortly to publish a paper by Dr. W. H. Willcox on the incidence of scurvy and beri-beri among the troops in Mesopotamia. We may perhaps therefore leave the matter here for the present, only saying that to each of the six chapters of the report here noticed a valuable bibliography is appended.

WELFARE OF THE BLIND.

THE Minister of Health announces that an estimate has been laid before Parliament for a grant to be distributed in aid of certain services carried on for the benefit of the blind. The grant, if voted, will be available for aiding: (1) workshops for the blind, (2) home workers, (3) homes and hostels for the blind, (4) home teaching, (5) book production, (6) the work of the county associations; and (7) for miscellaneous purposes. It is stated that no financial help can be provided for the unemployable blind without fresh legislation, which is not at present practicable, but a promise has been made that proposals will be laid before Parliament as soon as possible. Most of the purposes for which grants are or will be available present no novel features. The provision for the aiding of home teaching is good. At present there is a serious shortage of teachers. It is hoped that this service may be extended so that there should be one teacher for every fifty blind in an urban area and one for every thirty-eight in a rural area. This service would afford useful and remunerative work to the better educated blind. Paragraph 33 of the regulations governing grants for miscellaneous work carried on for the benefit of the blind is important: "In this connexion the Minister would particularly welcome any considered scheme for research work in new industries for the blind or for work in connexion with the prevention of blindness." This is a valuable regulation, and should stimulate work in the two directions indicated. It is hoped that ophthalmic surgeons will rise to the occasion, particularly by investigating the ways in which the numerous industrial accidents may be lessened.

CONCEALMENT OF TUBERCULOSIS.

WITH every succeeding year the organization of means for dealing with tuberculosis is being extended in the English counties and large boroughs. Much money is being laid out, and a fair proportion of success in the treatment of early cases is recorded in the annual reports rendered by tuberculosis officers, but one and all of them have the same tale to tell of increased mortality and no appreciable diminution in case incidence. In the report for 1918 issued by the Central Tuberculosis Officer for Lancashire abundant evidence is afforded of the thoroughness with which the work has been undertaken in that county. By mapping out the various districts, each with its full complement of medical, nursing, and visiting staffs, an effective means has been found for dealing with every known case of tuberculosis. No difficulties appear to have arisen with regard to domiciliary treatment by private practitioners. Extra nourishment both for insured and uninsured patients has been supplied, and defects of housing conditions and overcrowding have been regulated as far as possible. But still the disease goes on. The weak link in the chain, in Lancashire as elsewhere, is said to be that notification, which is regarded as the primary safeguard, is neglected. Infective cases are allowed to contaminate their surroundings for many weeks or months before the nature of their disease is revealed by the registration of the cause of death. It would appear that the percentage of unnotified cases is steadily increasing in Lancashire. Taken in conjunction with the fact that very many cases are only notified in the last stages of the disease, it follows that much of the labour and expense incurred in combating and checking the spread of tuberculosis is being thrown away. The Tuberculosis Order which came into force in 1913 in England and Wales provided (Article V) that every medical practitioner, with the exceptions noted below, must notify to the medical officer of health any case of tuberculosis so soon as he has made this diagnosis from evidence other than that derived solely from tuberculin tests. Notification must be made in respect of any case seen in an institution or otherwise. An institution includes a hospital, dispensary, or similar institution, and a lunatic asylum. But a medical practitioner is instructed not to notify a case of tuberculosis if he has reason to believe that the case has already been notified to the medical officer of health for the district within which the person resides. A special article (VI) provides that a school medical inspector shall notify to the medical officer of health once a week all cases of tuberculosis of which he has first become aware in the course of inspections made by him during that week. Further, Article VII provides that the medical officer of a Poor Law institution or a sanatorium shall each week notify to the medical officer of health all cases of tuberculosis admitted or discharged during the week. A medical

officer of health is required to keep a register of cases notified to him, and must make inquiries and take such steps as are necessary to investigate the source of infection, to prevent its spread, and to remove conditions favourable to infection. Fatal cases of consumption must in the vast majority of instances have been under some form of medical treatment for a longer or shorter period before death, so that the local authorities may justly complain when they only become aware of the cases through the registration of the cause of death. Failure to notify such cases can only be accounted for on one or two grounds: either the nature of the disease has not been recognized, or the "blind eye" has been applied in the supposed interest of the patient or his friends. It is, however, to be noticed that the proviso in the Order directing a medical practitioner not to notify a case when he has reasonable grounds for believing that it has already been notified must operate to defeat the object of the Order. If the patient or his friends assert that the case has already been notified, this would afford reasonable grounds for the medical practitioner to conclude that he was prohibited from notifying again. The Order requires the local medical officer of health to send weekly to the county medical officer of health a statement of every notification received in respect of a person residing within the district. The responsibility for tracing the removal of a patient appears therefore to rest on the county medical officer. The steady advance of tuberculosis is a public calamity, and if notification is to yield results of national use, it seems clear that not only should medical practitioners be punctilious in the discharge of the duty laid upon them by the State, but also that administrative measures should be improved.

RADIUM IN GLIOMA.

THE outlook in cases of glioma retinae is so bad that it is of importance to record any method of treatment which seems likely to be of service in preventing the growth developing or recurring after the eye has been excised. A case of glioma retinae apparently arrested by radium treatment, recently recorded by Dr. Mark J. Schoenberg[1] of New York, is worthy of notice. A female child, aged 2 years, came under Schoenberg's observation early in 1916 with what was clinically a typical glioma in the left eye, and with a suspicious-looking mass at the posterior pole of the right eye. The mother reported that the "shine" of the left pupil had been different from that of the right almost from birth. The left eye was excised, and the growth on examination proved to be a typical glioma of the retina. While the child was under the anaesthetic a careful note was made of the appearances in the right eye; the size of the mass was estimated, and it was found that it was surrounded by patches of choroidal atrophy with pigmented borders; in the mass itself were two small spots of gliomatous degeneration, and in the extreme periphery there was another smaller patch, which was not surrounded by any choroidal disturbance. Radium treatment was begun at once, and was repeated after five months and again after eighteen months. At the time of the final application some posterior cortical lens change was noted; an organized vitreous opacity veiled the retinal mass at the posterior pole; this mass then appeared to be almost flat, of dense white colour, and showed glistening patches of degeneration; the patch in the periphery had certainly not increased in size. In the discussion of this case, when it was shown before the ophthalmological section of the New York Academy of Medicine, one member reported that he had seen in a similar case improvement after radium treatment, but it had not been permanent; another member considered the fundus appearances suggestive of syphilis, but to this Schoenberg replied that the serological reactions of both parents were negative; he stated also that the tuberculin tests of the child herself were negative. Knapp pointed out the importance of this case in view of the fact that glioma is bilateral in about 20 per cent. of cases, and that permission to remove the second eye is rarely obtained. Two points in this case should be noted: the first, that the length of time during which the mother had observed the amaurotic cat's-eye reflex in the first eye, from the first month to the end of the second year, was unusually long; glioma is a rapidly growing tumour, and had it been growing actively for two years it might have been expected to have perforated the eye before that time. The other point is that the choroidal changes observed around the mass in this case are uncommon, as, indeed, Schoenberg allows. The paper is important in that it reminds us of a method of treatment which should most certainly be tried in cases of bilateral glioma, where permission to remove both eyes is withheld, and in cases where glioma recurs in the orbit after removal of the eye. We imagine, however, that in the light of present knowledge most surgeons would press for permission to excise both eyes, and would resort to radium in the event of recurrence.

[1] *Archives of Ophthalmology*, September, 1919.

PROFESSOR HOWARD A. KELLY.

OF the four planets of the Johns Hopkins Hospital portrayed in J. S. Sargent's Academy picture, Sir William Osler, Professor W. H. Welch, Professor W. S. Halsted, and Professor Howard Kelly, only one, the professor of surgery, remains in his original orbit of 1889. Professor W. H. Welch, though still in Baltimore and occupied with the direction of an institute of health, was some time ago succeeded by W. G. MacCallum in the pathological chair he had held since 1884; and now Professor Howard A. Kelly has retired from the chair of gynaecology. "The old order changeth, yielding place to new," and very appropriately Dr. T. S. Cullen gives an attractive account of his old chief in the October issue of the *Johns Hopkins Hospital Bulletin*.[1] Born in 1858 in New Jersey, Dr. Kelly graduated at the University of Pennsylvania in 1882, and soon showed his operative skill at the Kensington Hospital, so that when the important post of associate professor of obstetrics at his old university fell vacant in 1888 Professor W. Osler declared that he was backing "a dark horse, a Kensington colt," and now, many years after, writes: "How extraordinarily successful he has been! Only those of us who know the work as it was realize how much the profession (and the public) owes to such men as Kelly." The Johns Hopkins Hospital called Dr. Kelly in 1889 at the early age of 31 years, and the next thirty years saw a most astonishing output of work in the most varied directions; Dr. Cullen says—and it is indeed high praise: "No one connected with the Johns Hopkins Hospital has written more or has added more to the knowledge of his department than has Dr. Kelly." His professional publications spread widely into general surgery; he was a pioneer in the use of cocaine anaesthesia, wrote on catheterization of the ureters both in the male and the female, on the use of radium, on the vermiform appendix, and on abdominal surgery. His gynaecological works are too well known to mention. A bibliography, compiled by Miss Minnie Blogg, contains 485 entries, and shows the catholicity of his interests. His volume on *Walter Reed and Yellow Fever* (1906) is a classic; his *Cyclopaedia of American Medical Biography*, containing the lives of about 1,100 eminent deceased physicians and surgeons from 1610 to 1910, appeared in 1912, and has for some years been under active revision. As a keen medical historian he is naturally a lover of books; but more than this (for it is not an invariable characteristic of a bibliophile) he has made the most generous presents of choice editions to the hospital library. Religious and philanthropic work has occupied no small share of his extremely active life,

[1] T. S. Cullen, *Johns Hopkins Hosp. Bull.*, Baltimore, 1919, xxx, 287-302.

during which he has usually taken two months' holiday in a simple camp in Canada studying flowers and mushrooms, taking canoe trips, and maintaining his record as a long distance swimmer. He now retires from the active management of the gynaecological department of the Johns Hopkins Hospital with the cordial good wishes of his colleagues, associates, pupils, and friends.

ARTIFICIAL DAYLIGHT.

A PRELIMINARY demonstration of a new method of producing "artificial daylight" was given at a meeting of the Illuminating Engineering Society on November 25th. The method makes use of a coloured (and curiously patterned) reflector for correcting the distribution of energy in the spectrum of a lamp. The original invention is due to Mr. George Sheringham the artist, who used an ordinary electric lamp with reflectors which had been treated by certain blue and green pigments in an empirical pattern. He found the quality of the light for painting greatly improved. The matter was then referred to the Optical Engineering Department of the Imperial College of Science and Technology, and Mr. L. C. Martin, a lecturer at the college, undertook some experimental work with a larger number of pigments, and designed a suitable reflector to produce a daylight effect from a tungsten filament half-watt lamp. The requisite distribution of colours was calculated on spectro-photometric measurements of opaque pigments made by means of Sir William Abney's colour-patch apparatus. Mr. Martin demonstrated his appliance at the meeting, and showed the difference between the corrected and the uncorrected light in the effect produced upon a number of coloured materials. Under ordinary artificial illuminants blue appears very low in luminosity compared with red, but with a lamp having the corrected reflector the two colours, blue and red, are not very far removed from one another in luminosity. There are many directions in which artificial daylight can be of commercial and industrial use; it will also be of service in the photography of coloured objects, and with modified units (which are promised) it should find medical applications.

AT the meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine on Thursday next, December 4th, at 8 p.m., a discussion on the recent report on the teaching of obstetrics and gynaecology in London (BRITISH MEDICAL JOURNAL, August 30th and September 13th) will be opened by Dr. T. W. Eden, chairman of the Teaching Committee. A criticism of the report will be read by Dr. Herbert Spencer. Copies of the report and criticism may be obtained on application to the Royal Society of Medicine.

Medical Notes in Parliament.

The Nurses Registration Bill.—The second reading debate on the Nurses Registration Bill, the provisions of which were explained in the BRITISH MEDICAL JOURNAL of November 22nd, p. 683, took place, as already stated, on November 18th. It was of a brief and friendly character. Dr. Addison, in the course of his statement, said that if the income of the proposed council should prove insufficient the Treasury would give favourable consideration to a proposal by him to ask Parliament for a grant. Major Hurst assumed that the nurses on the register would have the exclusive right to wear one certain type of uniform and badge, and regretted that the council would not have jurisdiction on questions as to conditions of employment Captain Barnett, as the promoter of the Nurses Registration "No. 1" Bill, supported the second reading, and Mr. Lyle, who opposed that measure, also gave the bill a very warm welcome. Sir Watson Cheyne joined in the congratulations to Dr. Addison, but was disappointed that the bill was limited to England. There was a risk thus of having different standards of examinations in England, Scotland, and Ireland. Major Molson, as a medical man, also approved of the bill. Captain Eliott asked for an assurance from the Secretary for Scotland that a similar bill for Scotland was in a forward state of preparation, and this was given by Mr. Munro. Lieut.-Colonel Raw supported the bill in a single word of hearty appreciation. Dr. Farquharson also heartily congratulated Dr. Addison on the introduction of the bill, but said that in his opinion he did not take a sufficiently comprehensive view of the situation as a whole. The Ministry of Health should bring itself into direct relationship with all groups of workers—nurses, chemists, dentists, and doctors. He thought that the Ministry itself ought to be the registering body. Section 3, in his opinion, would really give the new council judicial power, and he suggested that it would be simple, instead of referring the question whether a poor erring creature was to be taken off the register to a council composed of comers and goers, to refer it to a judicial body nominated by the Minister. Sir William Whitla, having expressed regret that no mention had been made of Ireland, Dr. Addison said he knew that the Irish Office had this matter under consideration, and there was reason to expect that there would be a similar proposal for Ireland. The reason for a separate bill for Scotland was that there were some differences in the procedures of the two countries. He thought, however, that with the arrangements made for the interchange of registers and the prospect that there would be a common register, the point raised by Sir Watson Cheyne had been met. The bill after second reading was referred to a Standing Committee.

The Sale of Patent Medicines.—Sir P. Magnus, on November 19th, asked the Prime Minister whether, having regard to the further demands on the country connected with public health, and the ill effect of the use and advertisement of certain patent medicines, the Government would take an early opportunity of introducing a bill dealing with some of the recommendations of the Select Committee on Patent Medicines, whose report was published in 1913. Dr. Addison said, in reply, that the subject was having his careful consideration, and he was hoping before long to be able to take some practical steps in regard to it. He was not in a position to state the nature of those steps, nor the date. He appreciated the importance of the subject, but must have regard also to numerous other matters of a more pressing nature.

London Insurance Committee: Medical Benefit Fund.—Colonel Burn, on November 20th, asked the Minister of Health the date upon which the London Insurance Committee were notified by him of the amount of the Medical Benefit Fund for the year ended December 31st, 1918; the date upon which the Committee might be expected to make a settlement with the practitioner for the year 1918; the explanation of the delay in making the settlement; and whether the Minister would arrange for the payment to practitioners of interest at the current bank rate on the amount of the overdue settlement. Dr. Addison replied: The London Insurance Committee were notified of the amount of the Medical Benefit Fund for 1918 on September 9th, 1919. The Committee hoped to complete the accounting arrangements and to issue the cheques for the balances due to practitioners on the final settlement within the next few days. The accounting operations have been delayed by a few weeks, as compared with previous years, because the same staff have been engaged in calculating and making payment of the current half-quarter's instalments of the doctors' remuneration and of the instalments of their 1919 war bonus. No funds are available to the Insurance Committee for the purposes of a payment such as is suggested in the last part of the question. The London doctors received instalments amounting to 84 per cent. of their money during 1918, and shortly after the end of that year. Some considerable delay before the final settlement for the year can be effected is unavoidable under present arrangements, but a new system is being introduced to which the profession has agreed, from 1920 onwards, which will entirely obviate these long delays in making a final settlement.

The Maintenance of Hospitals.—Colonel Newman asked, on November 20th, whether the Government had any intention of converting the hospitals hitherto maintained by voluntary contribution into institutions partially or wholly assisted from public funds. Dr. Addison said that the steps suggested would not be within the power of the Ministry of Health, without legislation in respect of any hospitals not willing to accept such subsidies.

Public Supply of Anti-influenza Vaccine.—Dr. Addison, on November 20th, announced that the Ministry of Health were making arrangements for the preparation of a new supply of anti-influenza vaccine to be made available to medical officers of health for distribution to all practitioners in their areas who desired it. A circular and instructions would be issued, he hoped, in a few days.

Death Certification.—On an inquiry by Mr. Rowlands, Dr. Addison, on November 24th, circulated the following statement as to death certificates in the last five years:

	Total Deaths.	Uncertified Deaths.	Proportion.
1914	516,742	6 279	1.22
1915	562,253	7,684	1.37
1916	508,217	7,528	1.48
1917	498,922	7,552	1.51
1918	611,361	8,244	1.37

All the cases included in the above figures as "uncertified" had, in fact, been made the subject of an inquest or had been considered by a coroner not to need one. Nevertheless he considered that the present law of death certification needed reform, and the matter was receiving attention with a view to legislation as early as possible.

Infectious Diseases in London.—In reply to Mr. Grundy, on November 20th, Dr. Addison said that the number of cases of scarlet fever notified in the County of London during September was 1,205, and during October 2,017; the number of cases admitted to the hospitals of the Metropolitan Asylums Board was 1,100 in September, and 1,502 in October. As regards diphtheria the number of cases notified in London in September was 775 and in October 1,074; the number admitted to hospitals of the Metropolitan Asylums Board was 750 in September and 925 in October. The difficulties experienced in finding accommodation had been virtually overcome, and there seemed no reason to think that any abnormal spread of infectious disease was taking place.

Physical Education for Children.—Mr. Fisher informed Captain Loseby, on November 20th, that special grants were paid by the Board of Education in aid of expenditure of local education authorities on the employment of competent persons to organize and supervise the physical training of children in public elementary schools. This applied not only to counties but to the areas of all authorities for elementary education, and fifty-one such authorities were now employing recognized organizing superintendents.

The Housing Proposals of the Government.—Dr. Addison, on November 21st, explained the additional proposals of the Government to accelerate the provision of housing accommodation by encouraging private enterprise through a subsidy of a sum not exceeding £150 for each approved house built within twelve months. The new scheme was not intended to supersede that already started by the Government but to supplement it. Luxury building was to be arrested and municipal investment in building was to be fostered. A conference of representatives of all persons interested in the building trade would be addressed by the Prime Minister. Dr. Addison, in the course of his speech, insisted that the slow progress made under the Government plan so far was largely due to the inaction of his predecessor in office (Lord Downham). As to the making of preparations Lord Downham has since warmly repudiated the charge and has given an account of the preliminary work done by him as President of the Local Government Board.

Temporary Officers R.A.M.C.—Sir Watson Cheyne, on November 19th, asked the Secretary for War if he were aware of the discontent among the temporary Royal Army Medical Corps officers, with the army in India, on account of the manner in which their contracts were being interpreted; that men who had signed contracts in 1917 to serve until the termination of the present emergency, or until their services were no longer required—whichever should happen first—were informed in February, 1919, that the period of the emergency during which officers might count service for gratuity would expire on August 3rd, 1919; that on August 4th, 1919, they were asked to sign a fresh contract, which they almost unanimously refused to do; that shortly afterwards another contract, with somewhat better terms of pay, was offered to them, and they were told that those who refused to sign would be retained in the service whether they liked it or not; that some men who refused to sign had since been sent home to England, and posted to hospitals here, instead of being demobilized and allowed to resume their private practices—in one at least the medical man being a volunteer and not a conscript; and whether he would reconsider this matter, especially in view of the uncertainty occasioned by the discontinuance of the gratuity and the offer of fresh contracts. Mr. Churchill replied in a written answer as follows: "I am not aware that any discontent exists amongst temporary Royal Army Medical Corps officers in India on account of the manner in which their contracts of service are being interpreted. Temporary officers of the Royal Army Medical Corps serving in India were offered a new contract at 800 rupees per mensem if they would undertake to serve in that country for another year. Those eligible for demobilization and who did not sign the new contract, but whose services could not immediately be spared, were granted 750 rupees per month, with effect from July 1st, 1919. The new rates of pay, although they did not include a gratuity, were better than those rates on which they had been serving up to July 1st. Royal Army Medical Corps officers in India, as elsewhere, who are serving on a contract for the duration of the present emergency, are liable to be retained until the statutory date for the end of the war, and they were doubtless so informed, but a certain number of these have been sent home on public or compassionate grounds, or because they were en route for the United Kingdom from Mesopotamia, but detained in India on account of the emergency in that country. Junior officers, if on a 'duration of the war' contract, sent to the United Kingdom, may be retained and posted to commands at home for duty, and their claims for release may not be considered as pressing as those of other officers whom they relieve."

Pension for Majors R.A.M.C.—Sir H. Nield asked, on November 19th, whether, under the Royal Warrant of September 13th, 1919, the pension of a major R.A.M.C., payable after twenty years' service, was reduced from £365 to £321, and that, in effect, such an officer would be worse off so far as regarded pension than the infantry officer who joined the army straight from school; and whether he would state what was the reason for this anomaly, seeing that the R.A.M.C. major had to go through an expensive technical course to qualify before entering the army, while the higher rate of pension was given to those whose military education was largely furnished at the expense of the State. Mr. Forster replied that his attention had already been called to this point, and it was under his consideration.

Convalescent Centres for ex-Service Men.—On an inquiry by Mr. Hallas, Sir L. Worthington-Evans said, on November 20th, that the establishment of convalescent centres for the concurrent treatment and training of discharged disabled men had engaged his earnest attention for some time past. Labour and other difficulties had hindered progress, but a centre at Blackpool, to accommodate from 600 to 1,000 men, would be opened on November 25th, to be followed by others in different parts of the country. Another large centre at Epsom had been delayed for nearly six months owing to a wage difficulty, which had stopped all progress. In addition to these large institutions smaller centres had been established. So far the number of men undergoing concurrent treatment and training was negligible, but with the establishment of the larger centres it was hoped within the next few months to have full facilities for 2,500 cases. It was proposed in addition to increase the number of smaller centres. Figures of the cost to date were not at present available, as the Office of Works was still engaged in the necessary structural alteration of premises.

Psychotherapy (Treatment of ex-Service Men).—Mr. Macquisten, on November 20th, asked whether the Pensions Minister proposed to establish throughout the country clinics for the treatment, by means of psychotherapy, of functional nervous affections (including so-called "shell shock"); whether, if he intended to do so, he would issue instructions that all pensioners recommended to these clinics for treatment would be informed of the nature of psychotherapy, that it was a form of treatment in which more or less hypnotic suggestion was used; and whether, in the event of pensioners refusing to accept psychotherapeutic treatment, he would ensure that the pensioners in question should not be prejudiced by such refusal, but that all pensioners should have offered to them alternative treatment. Sir L. Worthington-Evans said the answer to the first part of the question was in the affirmative. He reminded the hon. member that psychotherapy was a comprehensive term, including many forms of treatment, of which hypnotic suggestion was the form less frequently used. If in any case hypnotism should be proposed as the most desirable form of treatment the man would be perfectly free to refuse it, and no penalty whatever would attach to his treatment.

The Employment of Disabled Men.—Mr. Wardle, on November 19th, in reply to Major Barker, stated that the number of municipal and other public bodies which had given undertakings to employ disabled men in terms of the national scheme was 172. Many other bodies had the matter still under consideration, and he trusted that in the near future the position would substantially improve.

Tuberculous ex-Service Men.—In answer to Lieut.-Colonel Raw, Sir Tudor Walters, for Dr. Addison, said on November 24th that immediately the recommendations of the Committee with regard to the treatment and training of tuberculous ex-service men were received, steps were taken to expedite their application. He had just received a further letter of consent from the Treasury in respect of the development of training facilities.

Women and Service Pensions.—In reply to Mr. Clement Edwards, on November 20th, Sir L. Worthington-Evans said that women discharged from the auxiliary corps attached to the Army, Navy, and Air Service were not pensionable by his department. They were, he understood, granted compensation in some cases under the Workmen's Compensation Acts, and in others under the Injuries in War Compensation Act. The grants were administered by the Service Department concerned—that was, by the Admiralty, War Office, or Air Ministry. He had received representations on this subject from many quarters, but he had no satisfactory evidence that the legitimate claims of these women could not be met under the existing arrangements. He was in communication with the First Lord of the Admiralty and the War Secretary.

Public Vaccination.—Mr. Waterson asked Dr. Addison, on November 24th, whether, before introducing a bill to separate the medical administrative work of boards of guardians from their duties under the Poor Law, he would have an inquiry into the position of vaccination in England and Wales with a view to the abolition of compulsion. Dr. Addison replied that the question of public vaccination work and administration must be considered when the Poor Law machinery was dealt with; but he saw no reason for an "inquiry" such as was suggested.

Bedding and Clothing in Tuberculous Cases.—Sir H. Nield asked the Pensions Minister, on November 13th, whether he would reconsider the existing provisions dealing with the special bedding and clothing for tuberculous cases. Sir L. Worthington-Evans, in a written reply, stated he was aware that the regulations as to the supply of special bedding and clothing had given rise to some complaint, and he had the matter under consideration.

Becketts Park Hospital.—In answer to Colonel Ashley, on November 19th, Sir James Craig gave a definite assurance that the Becketts Park Hospital, Leeds, would not be closed down until there was no longer need for its maintenance.

England and Wales.

WEST LANCASHIRE VOLUNTARY AID DETACHMENTS.

An interesting account of the West Lancashire Voluntary Aid Detachments, which were brought into existence on the establishment of the Territorial Force Association in 1908, has been published in the *Liverpool Courier*. Sir James Barr was appointed county director in that year and raised a series of detachments of male and female workers. When the war broke out every one of these detachments proved not only to be efficient, but furnished personnel for new detachments, so that during the war there were altogether 19 male and 44 female detachments in West Lancashire. The first task Sir James Barr had to undertake on the outbreak of war was the organization of the existing means of transport. The number of ambulances was rapidly increased; those owned by the public authorities were used, two private ambulances were lent, and the manager of the Liverpool Corporation Tramways made box stretchers, with which twenty-five tradesmen's motor vans were equipped; in addition, 200 private motor cars were placed at the disposal of the organization. Sir James Barr, we are told, himself met every ambulance train or hospital ship that arrived in Liverpool for three and a half years. Classes in first aid and home nursing were organized to the number, in one detachment, of 55, conducted chiefly by the detachment surgeons, Dr. James Watson and Dr. Ernest Nevins. After America entered the war the work of meeting the ships was greatly increased, as many as twenty transports being met in the course of a single week; during the influenza epidemic of August and September, 1918, the work was very heavy. Regular duties were discharged by various members of the detachments in eleven hospitals, and Sir Robert Jones has borne testimony to the valuable services rendered by orderlies in the operating room of the Alder Hey Special Surgical Hospital.

TRIBUTE TO A METROPOLITAN M.O.H.

Dr. G. P. Bate, who was appointed medical officer of health to the Parish of St. Matthew, Bethnal Green, in January, 1876, and has held the same office under the Borough Council of Bethnal Green since its formation, is about to retire. At a recent meeting of the Borough Council the mayor referred to Dr. Bate's long and honourable service, and proposed a resolution, which was unanimously adopted. It recorded the council's sincere appreciation of the skill and devotion with which Dr. Bate had consistently performed his public duties, and testified that his unselfish application of them had materially contributed to the marked improvement in the public health, and had conferred benefits of incalculable value on the inhabitants of Bethnal Green. In conclusion, the council heartily congratulated Dr. Bate upon a long, honourable, and successful career, in which sympathy, generosity, and kindliness had ever been manifest, and assured him that the continuance of his activities in other spheres of professional work was accompanied by the goodwill and esteem of the council and of all sections of the community. It was resolved that a copy of the resolution, engrossed on vellum, should be presented to Dr. Bate.

LIVERPOOL MEDICAL INSTITUTION.

At the second ordinary meeting on November 20th, 1919, when Dr. A. Craigmile, Vice-President, was in the chair, Dr. J. C. Matthews read notes of a case of encephalitis lethargica developing pendular nystagmus during convalescence. The chief symptom was torpor; the temperature, bodily functions, and urine showed no deviation from the normal. The ocular disturbance was noted during convalescence, and the oscillations of the eyeballs were about five in one-third of a second before fixation occurred. There was no evidence of micro-organismal infection, and lumbar puncture revealed no abnormality in the cerebro-spinal fluid. Dr. Macalister read a note on the modern treatment of indigestion. At the outset he expressed the opinion that deficient metabolic activity was the primary cause and the stomach symptoms effects. Basing his observations on the rationing of food during the war, he came to the conclusion that spacing the intervals between meals and regulating the amount of protein, especially in cases of the gouty type, were more efficacious in removing the symptoms of ingravescent discomfort from the ingestion of the first meal to the last than the employment of the usual drugs in relieving gastrodynia, pyrosis, and flatulence. Mr. R. W. Kelly described an ingenious operation on the fibula for "slipping peroneal tendons." By means of a wooden model he showed by making an artificial flange of the peroneal margin of the fibula, and through section and displacement backwards of a wedge of bone, the dislocation of the tendons was prevented. Dr. Stookes read a paper on the retrospect and prospect of obstetrics, which is published at page 701.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.

The second meeting of the above society was held on November 13th at Newcastle-on-Tyne. In the afternoon a most interesting and instructive address on "Anaphylaxis in relation to disease in man" was given by Professor James Ritchie of Edinburgh, in the University of Durham College of Medicine. In the evening the annual dinner of the society was held in Tilley's Old Rooms, Blackett Street. The guests of the evening were Professor Ritchie of Edinburgh, Professor David Drummond and Mr. R. Orde of Newcastle. The president (Mr. J. D. Wardale) was in the chair. "Our guests" was proposed by Professor Stuart McDonald and responded to by Professor Ritchie. "The Northumberland and Durham Medical Society" was proposed by Mr. Orde and replied to by the President. The speeches all reached a very high standard. Both functions were well attended and extremely successful in every way.

Ireland.

ULSTER MEDICAL SOCIETY.

THE second meeting of the Ulster Medical Society was held in the Medical Institute, Belfast, on the evening of November 20th, when the President (Mr. Andrew Fullerton, C.B., C.M.G., F.R.C.S.), was in the chair. Sir James Mackenzie, M.D., F.R.S., was elected an honorary Fellow. Dr. R. L. Leathem read a paper on angina pectoris, and after brief references to the vasomotor type, and the precordial pain in advanced heart trouble, he directed attention chiefly to the type of precordial pain associated with coronary disease; there was, he said, a pre-anginal stage of dyspnoea, which it was important to recognize. He thought there was an acute and a chronic form; and in the latter prognosis was difficult; a high or a low blood pressure, neurasthenic temperament, and an onset without cause were unfavourable elements, whereas a medium blood pressure, an energetic and hardworking temperament, and the development of a mild mitral systolic, were favourable. Many cases lasted for years; and full notes were given of one in which the attacks were numbered by the hundred in 1916–17–18, but then gradually lessened, and ultimately disappeared. As regards treatment, the avoidance of effort, rest, diet, warmth, and amyl nitrite, whisky and morphine were the most reliable agents.

Dr. MacIlwaine then read a paper on clinical electrocardiography, and illustrated his remarks by numerous pulse tracings thrown on the screen. He had taken about 500 tracings, and of these 85 were examples of some of the six recognized arrhythmias.

The papers were discussed by Drs. Calwell, Leslie, Robb, Marshall, and Professor Sinclair and the President, who unanimously expressed their thanks and indebtedness to both readers for lucid and instructive exposition of difficult subjects.

SALARIES OF POOR LAW MEDICAL OFFICERS.

At a largely attended meeting of the medical practitioners of North Co. Down the following resolution was unanimously passed, and has since been approved by those who were unable to be present at the meeting:

> That we, the medical practitioners of the northern half of the co. Down, demand that the veto of the Local Government Board on maximal salaries of £300 and upwards, passed by boards of guardians, be at once withdrawn; that the minimal remuneration for locumtenents of dispensary districts be £6 per week and for a workhouse £4; that we instruct our representative on the Irish Medical Committee to take steps to forward this resolution, and we pledge ourselves to support the Irish Medical Committee in any course it may recommend to give effect to the terms of our resolution.

IRISH PUBLIC HEALTH COUNCIL.

The fourth meeting of the Irish Public Health Council was held at the offices of the Minister of Health for Ireland on Wednesday, November 19th. Dr. E. Coey Bigger, the chairman, presided, and the following members were present: Mrs. McMordie, Right Hon. Sir Henry A. Robinson, P.C., K.C.B., Rev. P. Kerlin, C.C., Sir Joseph A. Glynn, Dr. W. J. Maguire, Mr. J. Ewing Johnston, M.B.E., M.R.C.V.S., Dr. Stephenson, Sir John W. Moore, Dr. R. J. Rowlette, Sir William Thompson, Dr. Alice Barry, Mrs. H. L. Dickie, and Mr. E. Bourke, C.B. Major G. Harris, D.S.O., secretary, and Dr. Hennessy were in attendance.

Nurses' Registration.

The Chairman drew attention to the Nurses Registration Bill for England, and stated that he had been in communication with the Minister of Health for Ireland and the English Ministry of Health on the subject of a similar bill for Ireland. He hoped that full reciprocity between England and Ireland and Scotland in the matter of registration would be secured, and mentioned that he had consulted the various nursing organizations in Ireland with regard to the Irish bill, and that they had agreed generally to his recommendations, which were that the Irish bill should be similar to the English bill, but that the Irish Council should be much smaller than the Council proposed for England.

Medical Service.

The formulation of an improved scheme of health administration for Ireland was then considered, and after prolonged preliminary discussion its further consideration was adjourned until the next meeting on December 9th, 1919.

Public Health Medical Treatment of Children, Ireland, Act.

The committee upon the regulations under the Public Health (Medical Treatment of Children) (Ireland) Act, at its meeting on November 20th, received representatives from school managers and teachers' associations, and considered the suggestions made by them in regard to the administration of the Act. The committee will meet again on December 10th.

Correspondence.

"NEW LAMPS FOR OLD" IN OBSTETRICS.

SIR,—Your leading article on this subject (November 22nd, p. 679) is both suggestive and timely, and starts a fascinating train of thought as to the effect of the war on obstetrics. Were I to offer any criticism it would be that your article concentrates overmuch on changes in tactics and does not give sufficient prominence to the strategy of the campaign as a whole.

Although obstetrics may not have received the same stimulus from the war as medicine and surgery, the war has produced a reflex response on obstetrics scarcely less marked than the effects of its direct stimulus on medicine and surgery. The change was in process before the war, but has been greatly quickened by it. The chief stimuli seem to be:

1. The progress and the success of preventive medicine throughout the war.
2. The examination of recruits and the attention drawn to lack of physique.
3. The necessity of population not only for war but for peace production.
4. The work of women in munition factories and the problems thus raised in regard to pregnancy, lactation, and pelvic disability in relation to industrial efficiency.

The pre-war and post-war changes have involved a revision of both the strategy and the tactics of obstetrics. The campaign a a whole must be regarded as starting from conception and covering pregnancy, labour, and lying-in, and continuing through the nursing and rearing of the rising generation. The principles dominating the new strategy are those of preventive medicine; to keep the pregnant woman in health of body and mind, to see her pregnancy to a safe termination; that she runs the minimum risk of disability, and is speedily and completely restored to efficiency, able to nurse and care for her child; and finally that her child is born uninjured, healthy, and given the all-important start towards developing into an A1 physique.

This new strategy involves a change in tactics. We know little of the intrauterine period; though we are now devoting much attention to it, we have neglected it hitherto, and must await the developments that will come from increased knowledge and further experience. The greatest success in this field has been attained in the intelligence work, so that the number of unforeseen and unanticipated occurrences in labour have greatly diminished. Labour, though merely an episode in the campaign, is the cause of the greatest number of casualties, and it is here that improvement in our tactical methods is especially required. The causes of the high casualty rate are, as regards the mother: (1) Infection; (2) injury; (3) nervous wear and tear; and as regards the child the first two also apply. How must our tactics be modified to meet this high casualty rate?

1. In the first place clearly by strict adherence to the technique of surgical cleanliness. Mr. Bonney points out its success in hospital practice and its coincident lack of success in home-conducted labour, and makes out a strong case for labour being considered as a surgical operation and given the same surroundings and conditions. But there must be a change not only in the place of attack but also in the method, especially towards diminishing internal manipulations, for even in hospital practice the morbidity rate goes up with interference.

2. To avoid lacerations and their results, immediate and remote, the reign of force must be ended. The uterus does not act as it should in our ultra-sensitive community, so our new tactics should help the natural powers by lessening pain, emotional effects, and fatigue, thus lessening also the need for manipulative interference.

3. The avoidance of exhaustion during labour with adequate rest to mind and body during the puerperium and lactation will lessen nervous stress and strain. The management of the lying-in time and the importance of considering the psychological element in the patient is fully discussed in your article. To keep the woman in good physical condition during this period of rest, massage and physical exercises are brought in. Here the experience gained in the war of what can be done in the way of re-education and improving the tone of muscles has been valuable. Special exercises have been devised to improve the tone of the overstretched abdominal and perineal muscles and diminish the risk of abdominal and pelvic prolapse.

As regards the child, the conditions leading to infections of the cord and eyes are preventable, and investigations as to the cause of birth injuries, carried out by Eardley Holland and others, may lead to a great diminution in intranatal casualties.

The other great change in our methods is to rely more on Nature and to give up substitutes, whether the forceps for the maternal power, or artificial food in the place of mother's milk, the latter being of immense importance in the final stage of the campaign. But that is another story, as here obstetrics branches off into pediatrics.

The general practitioner is quickly acquiring the new tactical methods, but that some of the campaigners of the old school do not find it easy was shown by some letters in the JOURNAL following the publication of the report on the teaching of obstetrics. In one of them the old tactics of force and the forceps were still advocated, and the writer seemed to glory in his interference in 50 per cent. of the labours he attended. It will take time for the new lamps to replace the old, but such articles as the one you have just published will do excellent propaganda work and hasten the replacement.—I am, etc.,

London, W., Nov. 24th. JOHN S. FAIRBAIRN.

TREATMENT AFTER TONSILLECTOMY.

SIR,—Once again in full detail the important question of operation for enlarged tonsils and adenoids is before us in the pages of the JOURNAL of October 4th. Mr. Bowen's complete account must be of interest to those who are engaged in this branch of surgery.

There are one or two points, however, that I should like to raise. He says: "I would go so far as to say that once the tonsils have been the seat of tonsillitis they should be

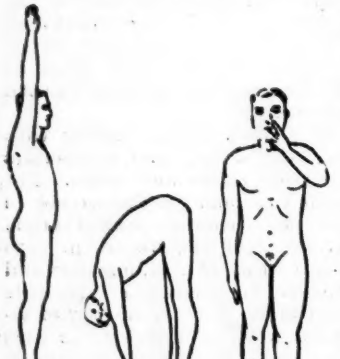
removed." If by this he means when the tonsils are enlarged, I venture to say that there is one class of person to which this dogmatic statement should not apply, and that is those who are engaged in the singing profession. Any treatment but operation should be carried out in such cases, as it is common knowledge that the removal of enlarged tonsils is likely to interfere with voice production, and so the professional singer is unable to carry on.

My second point is as to haemorrhage. I would always select the method of removal of tonsils by means of the cold snare in preference to a blunt or sharp guillotine in cases of enlarged fibrous tonsils, and the snare should be allowed to remain fast a few seconds to lessen any chance of excessive bleeding.

With regard to after-treatment, to my mind it is not sufficient to give verbal instructions to hospital patients with regard to exercises, and the following is a copy of instructions and figures adopted at the two hospitals to which I have the honour to be Throat, Nose, and Ear Surgeon.

Directions for Exercises for Children after Operations for Tonsils and Adenoids.

Position 1.—Stand with body and head erect, chin slightly drawn in, the chest expanded, eyes looking straight forward, knees well braced back, heels together, toes turned out, so that the feet together form about a right angle, the weight of the body on the fore part of the feet, with the lips tightly closed (the teeth not clenched however) so that the breathing may be entirely through the nose, both in inspiration and expiration. Gradually bend body forward till hands touch the feet as in Position 2, at the same time emptying completely the chest.



Position 1. Position 2. Position 3.

Position 2. — Gradually rise from this position to position 1, filling up chest to fullest capacity with hands well raised up and behind head.

Position 3.—Place the left forefinger on the left nostril so as to occlude it, bring the right arm up and out, fully extended to level of the shoulder, at the same time taking a deep breath through the right nostril till chest is fully expanded, then bring arm back to former position emptying chest at the same time.

Position 4.—Repeat for opposite side.

General Directions.—(1) All exercises are to be done with as little clothing as possible. (2) Preferably out of doors. (3) At rate of about twelve to the minute. (4) Mouth always closed. (5) Twenty of each to begin with, two or three times a day, increased till fifty can be done with comfort. (6) These exercises should be persisted in for at least six months. (7) If there is snoring, or mouth is kept open at night, a chin strap should be worn.

This important part of the after-treatment is too often omitted, and I cannot find that it is generally adopted.—I am, etc.,

ARTHUR M. BARFORD,
Surgeon, Throat, Nose, and Ear Department Royal West Sussex Hospital, Chichester, and to Portsmouth and Southern Counties Eye and Ear Hospital.

SCHOOL MYOPIA.

SIR,—Your correspondent, Mr. W. Campbell M'Donnell, justly says that among the many causes of school myopia uncorrected hypermetropic astigmatism has a place, but he doubts whether clinical proof of the transition from hypermetropic to mixed astigmatism is possible. In the course of twenty years' service on the staff of an ophthalmic hospital where a proportion of the patients are school children, many of whom are brought up by their parents for re-examination several times during their school life, I have come across several instances of this—cases of hypermetropic astigmatism in which one meridian has become myopic, while in some instances the process has gone on until both meridians have become myopic in spite of the wearing of correcting glasses.

Several years ago I published in the BRITISH MEDICAL JOURNAL (July 28th, 1906) some statistics of London elementary school children pointing to the same conclusion. Of 1,940 boys and girls of school age, all of whom had such defective vision that they required spectacles, the percentage with hypermetropic astigmatism in the younger children from 7 to 10 years old was 28.3, in those from 10 to 12 years old was only 22.6, and in the older children, from 12 to 14, was 20.1. In the case of mixed astigmatism the percentage in the first period was 24.8, and in the second practically the same, 24.9, while in the third period it had dropped to 20.4.

The explanation of these figures was seen in the percentages of myopia, including myopic astigmatism, for the different ages, which showed a continuous rise from 23.4 in the first period to 28.9 in the second, and 31.3 in the third. These were cases in which the errors of refraction had not at the time of examination been corrected.

It would be interesting to take similar statistics at the present time when the proportion of astigmatic children who wear correcting glasses is so very much larger than it was thirteen years ago. A comparison of the two sets of statistics might tend to show whether or not treatment by glasses has actually had any effect in preventing the development of myopia. Personally I am inclined to believe that it has.—I am, etc.,

London, W., Nov. 2nd. A. HUGH THOMPSON.

LOCAL CLINICAL LABORATORIES.

SIR,—I think I ought to reply to the letter of Bacteriologist, though his unworthy gibe at my "commercial" aim at first prompted me to refrain. Does not Bacteriologist work for fees or salary?

The answer to the question in his third paragraph is that we—like himself—go out and do them at the bedside, or the patient is sent to the laboratory. Furthermore, a large part of my own day is spent in consultation with clinicians, either at the bedside or the laboratory. That, however, is not the point. In the vast majority of cases the specimen can be—and in practice is—collected by the practitioner in such a manner as to arrive at a central laboratory in a suitable condition for full examination. In our experience such "spoilt" specimens as Bacteriologist refers to, with which every laboratory is, of course, familiar, amount to less than 5 per cent., and even in these a satisfactory specimen can be obtained after a little correspondence in almost every case. Much assistance can be given by well-planned outfits and full directions. Does Bacteriologist not know that all the appliances he mentions can be incorporated in an outfit? Suitably modified, they are with us in daily use.

To my further point I adhere—namely, that it is an advantage to the patient to have his specimen examined by two or three men in consultation rather than by one, however much of a pathological Admirable Crichton he may be! Moreover, the value of those men's opinion is increased enormously by their daily association with the work that comes into a central laboratory, necessarily very much larger than in the case of the local laboratories which Bacteriologist prefers.

My own experience of bacteriologists is pretty extensive, but I can count those who possess enough expert knowledge of morbid histology to give a reliable opinion on, say, the criteria of a pre-cancerous state, on the fingers of both hands. Certainly, in Bacteriologist's scheme, there would not be enough of them to go round, and Heaven help the patient whose diagnosis had to be made simply by "section spotting"!—I am, etc.,

November 17th. CLINICAL PATHOLOGIST.

HYPERPYREXIAL HEAT-STROKE.

SIR,—With reference to the letter of Captain Couldrey in your issue of August 2nd, may I suggest that a temperature not exceeding 105°, copious urine of extremely low specific gravity, and absence of all headache, cannot be held compatible with a diagnosis of hyperpyrexial heat-stroke?

In reply to Dr. Forman, I do not think that a possible sandfly infection could be excluded in the cases mentioned, as infected men were returning to camp where presumably sandflies existed. Details regarding the course of the disease would in these cases be very interesting, as the fact that they occurred mainly in men exposed to the midday sun suggests "sun tranmatism," as described by Manson, as being possibly a more correct nomenclature to apply in this instance.—I am, etc.,

Baghdad, Sept. 30th. H. C. SINDERSON, Captain R.A.M.C.(S.R.).

SIR,—With reference to Dr. Hearne's letter (BRITISH MEDICAL JOURNAL, August 9th, p. 187), in order to exclude sandfly fever as an etiological factor in the production of this condition on board ship I think it is necessary to be in a position to exclude the possibility of the sandfly having been admitted on board among cargo and stores; the fly is known to be transported from place to place by ship, so that there is presented the interesting possibility of infection en route.—I am, etc.,

H. C. SINDERSON,
Captain R.A.M.C.(S.R.).

Baghdad, Oct. 15th.

CHRONIC PANCREATITIS.

SIR,—Chronic pancreatitis has been neglected, and it is pleasing to read the letter published in the JOURNAL of November 22nd (in reply to my article) by one who knows the subject, Dr. J. A. Cairns Forsyth. My article is in full agreement with his statement that "Of all the diagnostic aids . . . the chemical analysis of the faeces comes first." By that means are we most likely to arrive at diagnostic precision on the subject, and such methods as I have found useful, or even promising, I have included in my article.

Dr. Forsyth and I seem on the subject of pancreatitis to belong to different epochs. He advocates Cammidge's test. I did not include it in my article because, after some years of its employment, aided by Professor Carstairs Douglas and others, I came to the conclusion that neither qualitatively nor quantitatively has it any practical value. The same conclusion has been reached by many others.

Further, Dr. Forsyth speaks of the cases of pancreatitis secondary to gall stones as being "by far the most common" cases of pancreatitis. My recent experience convinces me that the cases secondary to gall stones are by far the least common cases of pancreatitis.—I am, etc.,

JAS. H. NICOLL.

Glasgow, Nov. 24th.

THE SAFETY OF ETHYL CHLORIDE.

SIR,—In your issue for November 8th is a letter from Mr. C. B. Dale of Birmingham. He states that he has never seen a death occurring under ethyl chloride nor read of one. Further, that he estimates this anaesthetic as being as safe as ether. While agreeing to the general statement that ethyl chloride in competent hands is a valuable anaesthetic in suitable cases, I think its literature, now very copious, proves it to possess well marked limitations and a death rate higher than that arising from ether. Drs. Luke and Stuart Ross in a recent book have collected 23 casualties under ethyl chloride, and they estimate the death rate at 1 in 8,000. Dr. McCardie has had a wide experience, and urges caution in its use. He gives 1 in 10,000 as the death rate, and the late Sir Frederic Hewitt arrived at similar figures. Peterka gives 1 in 8,414, Ware 1 in 11,207, Seitz and Konstanz 1 in 16,000 as the mortality. Although I have not seen a death under this anaesthetic I have in the course of a wide experience encountered several cases in which dangerous symptoms presented themselves. The conclusion is forced upon one that ethyl chloride, valuable as it is, should not be regarded as a very safe anaesthetic or as suitable for those without experience, nor should it be employed indiscriminately. I venture to think in order of safety nitrous oxide comes first, then ether, then ethyl chloride, and, last, chloroform.—I am, etc.,

DUDLEY W. BUXTON.

London, W., Nov. 23rd.

SOCIETY FOR THE PREVENTION OF VENEREAL DISEASE.

SIR,—In view of the ravages and sufferings inflicted upon innocent persons, often women and children, by venereal diseases, and also of the fact that such diseases are very easily prevented, this society appeals to the public for donations in support of its policy of ensuring the adoption of preventive measures in the only way which offers any real hope of efficiently combating this terrible scourge.

Immediate self-disinfection, requiring no special skill or training, applied at the earliest possible moment, is the method advocated by this society, and for this purpose the necessary disinfectants must be available.

The aims of this society are to acquaint the general public with these means and to issue instructions for their proper use. The public are invited to become members of the society, for which the annual subscription is £1 1s., and, whether they become members or not, all who are interested are invited to send a stamped addressed envelope, when our leaflet giving the necessary instructions will be sent in return free of charge. Members of public bodies and representatives of works and clubs can obtain a supply for distribution on making application.

Inquiries, donations, and subscriptions should be sent to the Honorary Secretary, Society for the Prevention of Venereal Disease, 143, Harley Street, London, W. 1.—We are, etc.,

(Signed)
President: WILLOUGHBY DE BROKE.
Vice-Presidents:
RUDYARD KIPLING.
HUGH ELLIOT.
E. RAY LANKESTER, K.C.B., F.R.S.
LEONARD HILL, M.B., F.R.S.
LAURENCE R. PHILIPPS, Bt.
Executive Committee:
WM. ARBUTHNOT LANE, Bt., C.B., M.S. } Hon.
JAMES CRICHTON-BROWNE, F.R.S. } Treasurers.
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FRANCIS LLOYD, Lieutenant General, G.C.V.O., K.C.B., D.S.O.
R. A. LYSTER, M.D.
JOHN MACALISTER, F.S.A., F.R.G.S.
F. W. MOTT, K.B.E., M.D., F.R.S.
WILLIAM OSLER, Bt., F.R.S., F.R.C.P.
C. W. SALEEBY, M.D., F.R.S.E.
J. H. SEQUEIRA, M.D., F.R.C.P., F.R.C.S.
HUMPHRY ROLLESTON, K.C.B., M.D.
HUGH WANSEY BAYLY, M.C., M.R.C.S.,
Honorary Secretary.

November 19th.

PREVENTION AND TREATMENT OF VENEREAL DISEASE.

SIR,—In view of the attention which has been drawn to the subject of the prevention and treatment of venereal disease it may be of interest to your readers to see a copy of the memorandum which was unanimously adopted at the quarterly meeting of the National Council at the Central Hall, Westminster, on November 10th. The Council affirmed their view that the passage of this memorandum did not involve any change of policy and they are as firmly opposed as ever to any general distribution of prophylactic packets to the members of the civil community.

1. The prevention of venereal diseases is a large socio-medical problem. In the direct line of attack, ample facilities for treatment, and instruction of the public—both social and hygienic—occupy the first place. Concerning the further question of personal disinfection, after risk taken, our attitude is as follows:

2. It is no part of our policy to conceal the truth and we have always acknowledged the value of cleansing and disinfecting materials, applied early and thoroughly in diminishing the risk of disease.

3. Abstention from exposure to infection is the only certain safeguard against the ordinary risk of disease; continence is to be encouraged by every means and on every ground, both social and hygienic.

4. No person who has indulged in promiscuous intercourse can be sure that he is not infected, and every such person is, therefore, bound in duty to him- (or her-) self and to society to seek means of cleansing at the earliest moment.

5. For this purpose a thorough local application of soap and water is of great value, followed (if possible) by the use of such disinfectants as may be recommended by a medical practitioner.

6. While such applications, if properly used, do sensibly reduce risk of disease, if applied within four hours after exposure, they afford no certain security. They do not in the slightest degree prevent the contraction of syphilis on other parts of the body (for example, lips, face, or hands) than those disinfected. These applications are not suitable for treatment of the disease when once contracted.

7. The case of women must not be ignored. Satisfactory self-disinfection by them is practically impossible, and skilled medical attention at the earliest possible moment is absolutely necessary.

8. No one should be urged to arm himself in advance with a prophylactic packet.

9. It must be insisted on that the question of chemical disinfection is only one aspect of the problem of combating venereal disease.

—I am, etc.,

DOUGLAS WHITE,
Honorary Secretary, The National Council for Combating Venereal Diseases.

November 19th.

THE GENERAL MEDICAL COUNCIL ELECTION (ENGLAND AND WALES).

SIR,—We desire to thank the registered practitioners of England and Wales for their support in the election of direct representatives on the General Medical Council. It will be our duty and pleasure to take a full share in the work of the Council. In the general interest, that of the practitioner no less than that of the public, we shall watch carefully the conditions under which medical service to the community is given, and we shall help to direct the training of the student so that it may conform to the needs of social and scientific progress.—We are, etc.,

R. A. BOLAM.
J. A. MACDONALD.
E. B. TURNER.
T. JENNER VERRALL.

November 25th.

ANOTHER COMPLAINT OF THE SPECIAL RESERVE.

SIR,—The Director-General, A.M.S., in his address published in the JOURNAL of October 11th, paints a glowing picture of life in the regular R.A.M.C. after the war. He has not overpainted his picture, for when the army has been combed out, when the sick and wounded have been pensioned off and the auxiliary medical officers have retired into civil life to look after them, the regular officer will lead a sheltered existence and be able to devote his time, if he be so inclined, to the pursuit of knowledge, encouraged by every facility and the certainty of an increasing income and pension.

There is one thing, however, which the Director-General forgot to mention. There will be no Special Reserve of Officers to fall back upon in times of stress; at least, not until a generation arises which "knew not Joseph."

Possibly it is the intention of the authorities to let this Cinderella of the Service die out, for nothing has ever been done to remedy the injustice which has embittered us for the last five years. It has been the subject of many letters in the JOURNAL, among them a very able one from Dr. Gordon Ward in the issue of May 31st, 1919. Dr. Ward pointed out that he was about £300 out of pocket by being so foolish as to train for an emergency. This was in May, and for those of us who are still serving the loss is even greater.

All we ask for is equality. Presumably our work is of value equal to that of the temporary officer, and in some cases, at any rate, to that of the regular officer. It is said that we get the same pay and allowances as the regular—but we do not. The pay of the regular is pensionable, and ours is not.

When the new Warrant for Pay was issued we expected to find that we had been put on equal terms with the temporary officer. Comparing the two rates, we find that a captain T.C. now gets £650 a year (with rations or ration allowance, in addition) whereas a captain S.R. now gets £622 a year, rations included, on the top of which he loses his allowance if he is unlucky enough to fall sick or get leave.

I had the misfortune to be wounded, and spent three months in hospital. In the same building there was a temporary officer suffering from "myalgia." He was my junior, and had less than half my service; yet for the two months he was in hospital he drew 8s. 6d. a day more than I did.

We listened to the emissary from the War Office and joined the Special Reserve with our eyes open, believing it to be the right thing to do. We mobilized at short notice at the beginning of the war, and have borne the mutual trials and mutual work. We do not claim to be a set apart, but we do claim that equal service demands equal rates of pay.—I am, etc.,

October 13th. SPECIAL RESERVE.

PORTRAITS OF ANDREAS VESALIUS.

SIR,—Being engaged upon a work on the iconography of Andreas Vesalius, I should be grateful if you will allow me to appeal to those of your readers with whom I have not already corresponded on the subject, and who own or know of any such portraits, painted or sculptured, to have the kindness to communicate with me.

It is believed that certain of the portraits which at present are regarded as untraceable are to be found in institutions—in universities, medical schools and the like, or in semi-public or private galleries.

I may add that the book, which is to contain all the accessible portraits of the Father of Modern Anatomy, will be worthily produced under the authority and with the support of the *Annals of Medical History*.—I am, etc.,

The Athenaeum, Pall Mall, S.W.1., November 25th. M. H. SPIELMANN.

PARLIAMENTARY VACANCY IN ST. ALBANS DIVISION.

SIR,—May we through your columns invite the attention of all medical practitioners in the St. Albans area to the candidature for Parliament of Lieut.-Colonel F. E. Fremantle? The desirability of increasing the number of medical men in the House of Commons is admitted by all, and there can be no doubt that the return of Colonel Fremantle will be of the utmost value in the representation of medical interests.

The ways in which medical practitioners can assist in the election are by lending their cars, certainly on the polling day, and, whenever possible, before the election; by showing their patients that it is to their interest to return a doctor to Parliament; by taking care to vote for the candidate; and by speaking in his support whenever it can be arranged.

We hope that every medical practitioner in the St. Albans constituency who can help in any of these ways will place himself in communication with Colonel Fremantle's agent, Mr. A. E. Cockerell, 17, St. Peter's Street, St. Albans.—We are, etc.,

CHARLES BUTTAR, Honorary Secretary.
N. HOWARD MUMMERY, General Secretary.

British Federation of Medical and Allied Societies, 5, Vere Street, Cavendish Square, London, W.1, November 24th.

LIFE OF SIR LAUDER BRUNTON.

SIR,—In response to requests I propose to publish shortly a memoir of the late Sir Lauder Brunton. All profits from the sale of this book will be given to the sustentation fund of St. Bartholomew's Hospital. I should be very grateful for any communications from old friends of his, or for any letters of interest written by him. These would be carefully preserved and returned.—I am, etc.,

7, Poole Road, Bournemouth, Nov. 25th. THOMAS BODLEY SCOTT.

Medico-Legal.

LIABILITY UNDER THE LUNACY ACT.

ATTENTION is called by a recent case in the High Court to the position of magistrates, medical practitioners, and others who may be called upon to exercise the duties imposed upon them under the Lunacy Act, 1890, with regard to the reception of lunatics.

A reception order under the Act can, of course, be made in a number of ways, but the order itself is invariably made by a magistrate or other judicial authority, who must act only upon the certificate of a medical practitioner. In the case of a summary reception order the certificate of two medical practitioners is required. In addition to the medical certificate a magistrate or other judicial authority must, in the case of a lunatic found wandering at large, himself examine the alleged lunatic and make such inquiries as he thinks advisable in order to satisfy himself that the alleged lunatic is in fact a lunatic, and a proper person to be detained as such.

It may, perhaps, be noticed with regard to this duty of the magistrate that there is no obligation upon him to examine the alleged lunatic in the presence of the certifying medical practitioner, nor need the examination be held with the knowledge of the alleged lunatic so that he should have an opportunity of explaining, if he can, what would otherwise appear to be signs of insanity. The examination need be only such as is reasonably sufficient to enable the magistrate to form a bona fide judgement as to the man's mental condition. The same observation applies to the examination by the certifying medical practitioner.

In order to afford some measure of protection to those who are called upon to carry out its provisions Section 330 of the Act provides:

A person . . . who presents a petition for any such order [that is, reception order] or signs or carries out or does any act with a view to sign or carry out an order purporting to be a reception order, or any report or certificate purporting to be a report or certificate under this Act, or does anything in pursuance of this Act, shall not be liable to any civil or criminal proceedings whether on the ground of want of jurisdiction or on any other ground if such person has acted in good faith and with reasonable care.

This special protection therefore places all these persons in a position analogous to that of a man who brings another before a magistrate upon a criminal charge, such a person being liable in law to an action for damages at the instance of the defendant to the criminal proceedings provided it can be shown that the latter were undertaken maliciously and without any reasonable and probable cause.

As far as can be traced two actions only have been brought since the passing of the Act in which the effect of this protection has been reviewed.

I.

The first was a case of Shackleton *v.* Swift, which was decided in 1913. There the plaintiff had been received as an alleged lunatic into a workhouse, of which the defendant was master, under an order of a relieving officer made under Section 20 of the Act. Under that order the plaintiff was required to be detained for a period of three days. During that time the plaintiff was visited by a magistrate who examined but made no order with regard to him. Subsequently, the medical officer of the workhouse, acting irregularly under Section 24 of the Act, gave a medical certificate that the plaintiff should be detained for a period of fourteen days, and under this order the plaintiff was, in fact, detained for six days, after which she was discharged.

In an action for damages being brought against the master of the workhouse it was held that the Act gave special protection to officers and others acting under its powers in cases where, although they might have misconstrued the Act and have done things which they had no jurisdiction to do, they had acted in good faith and in a reasonable manner, and that upon the particular facts of the case there was no evidence that the master had acted otherwise.

II.

In the recent case of Everett *v.* Griffiths, which was tried before the Lord Chief Justice a week ago, the plaintiff had been an inmate of the Islington Workhouse. He was placed in the observation ward and four days later was certified by Mr. Anklesaria, the medical officer of the workhouse.

An inquiry was held on the following day which was presided over by the defendant Griffiths, who was the chairman of the Board of Guardians. Witnesses were called at the inquiry and, in the result, Mr. Griffiths signed an order for the plaintiff's reception upon which the latter was taken to Colney Hatch where he was detained from March 27th to April 9th, both of this year.

The plaintiff then brought his action claiming damages against Mr. Griffiths and Mr. Anklesaria. At the conclusion of the plaintiff's evidence counsel for the defendants submitted that there was no evidence to go to the jury that the defendants had acted without good faith or without reasonable care and, further, that as regards Mr. Anklesaria no action could lie against him at all. The judge, however, considered it desirable not to withdraw the case, upon which, however, the jury were unable to agree.

Thereupon the judge considered the point of law which had been raised. As regards Mr. Griffiths, he pointed out that in signing the reception order he was exercising a judicial function for which, independently of the special protection given by the Act, he was protected by the ordinary principle of law. With regard to Mr. Anklesaria, the judge pointed out that he was called in to assist a justice of the peace by giving a certificate as to the plaintiff's mental condition. The restraint which was imposed upon the plaintiff was the result of the magistrate's order, and not of the doctor's certificate, and he therefore gave judgement in favour of both defendants.

This case is one of importance from the point of view of medical practitioners. The decision was based on well known legal principles, and would appear to authorize the following two propositions:

1. Where a certificate is given as to an alleged lunatic, and a reception order is subsequently made by a magistrate, the medical practitioner is not liable in damages in respect of the detention; and

2. Where a certificate is given which is not followed by a reception order the medical man may be liable in damages for any consequence of the issue of his certificate, with this proviso, that Section 330 of the Act protects him if he has acted in good faith and with reasonable care.

Obituary.

ARTHUR EVERSHED, M.R.C.P.,

Formerly Senior Physician North London Consumption Hospital.

DR. ARTHUR EVERSHED, who died on November 17th in his 84th year at his residence at Fishbourne, near Chichester, was born at Billingshurst, Sussex, and was the son and grandson of medical men. His inclination, however, was towards art; he entered the studio of the late Mr. Alfred Clint, and attended Leigh's School of Art. He showed great promise, and at an early age had pictures in the Royal Academy and at other exhibitions. At the earnest wish of his father, however, he became apprenticed to the elder of his three brothers, who had entered the medical profession, and eventually became a student at Guy's Hospital. While still a student he became prosector to the Royal College of Surgeons, and used his skill as a draughtsman to execute anatomical drawings for the lecturers. After taking the diplomas of M.R.C.S. and L.S.A. in 1863 he held the appointment of house-surgeon to Guy's Hospital. In 1864 he married, and settled in practice in Bedfordshire. In 1873 some failure in health and the lack of educational facilities for his family induced him to remove to Hampstead. He took the diploma of M.R.C.P. Lond. in 1875, and became physician to the North London Consumption Hospital, Mount Vernon. Before he resigned his appointment twenty years later he had the satisfaction of seeing the first wing of the new building erected from a design which embodied his teaching as to the advantages of sunshine and fresh air.

His practice at Hampstead was large, but of such a nature that during the summer afternoons he was able to visit his beloved Thames with his drawing materials. In 1894, when he retired from practice, he received a presentation of silver and a purse of gold from his patients and friends. In his retirement at Fishbourne, though his time was given up to the study of nature and practice of art, yet his services were always at the call of the inhabitants of the village in cases of emergency. To show how this was appreciated, those who had benefited by his skill and other village friends presented his wife and him with an armchair and a writing cabinet on their golden wedding day.

In the late sixties he became interested in etching. So great was his skill that it was as easy for him to draw direct on the copper from nature, reversed without the aid of a mirror, as in the ordinary way; from this time onwards he became better known as an etcher than as a painter, and his etchings were exhibited at the Academy for several years. He joined the Royal Society of Painter-Etchers, and became its treasurer; when it grew difficult for him to attend the meetings, the Fellows elected him an Honorary Fellow and presented him with a collection of their etchings. He published two portfolios of etchings entitled *An Etcher's Rambles*, and also some separate large plates of the Tower of London. He printed many of his plates himself, and collectors may recognize these by the impress of a boar's head.

His funeral was that of a simple villager; his mortal remains lie in the little village churchyard of Fishbourne.

In 1864 he married Mary Hester, eldest daughter of Mr. H. W. Field, Queen's assay master of the Royal Mint, and a descendant of Oliver Cromwell. He is survived by his widow and seven children, the eldest, a son, being the only one who followed his father's profession.

LIEUTENANT-COLONEL CECIL ROBERT STEVENS, Bengal Medical Service, died at Paignton, Devon, on November 18th, aged 52. He was the eldest surviving son of the late Sir Charles Stevens, K.C.S.I., Lieutenant-Governor of Bengal; was born on March 14th, 1867, and was educated at St. Bartholomew's Hospital and at Zurich, taking the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1890. He graduated M.B. and B.S.Lond., with honours in medicine and midwifery, in 1891, and M.D. in 1892, and took the F.R.C.S.Eng. in 1892. He won an exhibition in zoology at the preliminary scientific examination of the University of London, an open scholarship at St. Bartholomew's in 1885, and the Martin gold medal and Fayrer prize in pathology at Netley. After filling the posts of house-surgeon and midwifery assistant at St. Bartholomew's

he entered the I.M.S. in 1893, and attained the rank of lieutenant-colonel on January 30th, 1913. After three years' military duty he took civil employment in Bengal in January, 1896, served as resident surgeon of the Medical College Hospital, Calcutta, from 1896 to 1899, as a civil surgeon in various districts, including Bhagalpur and Darjiling, from 1899 to 1907, and in June, 1907, was appointed professor of anatomy in the Calcutta Medical College and second surgeon to the College Hospital. In November, 1914, he reverted to military duty, and came to Europe, and through 1915 served in the Indian hospital at Bournemouth. He had previously served on the North-West Frontier of India in the Chitral campaign of 1895, receiving the medal and clasp, and in the Tirah campaign of 1897–98, gaining two more clasps to the Frontier medal.

WE regret to announce the death of Dr. H. L. ATKINSON of Cockermouth at the age of 50. He had not been in the best of health for some time past, but his condition was not regarded as serious, and he had been at his work two days before his death, which took place on November 15th from heart disease. Dr. Atkinson was a Yorkshireman; he was educated at Christ's College, Cambridge, taking his B.A. degree in 1891. He received his practical training in medicine and surgery in the Leeds School of Medicine, and St. Mary's Hospital, London, obtaining the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1902. He then held the appointment of house-surgeon in the Leeds Infirmary. After this he was for some time in practice at Kirkstall, near Leeds, but about seven years ago he went to Cockermouth, taking over an old-established practice formerly carried on by the late Dr. Harrison Mitchell. Here his marked ability and kindness of heart quickly obtained for him the confidence of his patients. He took a keen and practical interest in some of the town's most useful institutions, and it was through his training that the members of the St. John Ambulance Brigade attained their efficiency and the members of the V.A.D. were enabled to do such creditable work in the Cockermouth Castle Auxiliary Military Hospital during the war under his guidance as honorary medical officer. In his recreations his talents were no less marked than in his profession. He was an accomplished musician, an enthusiastic chess player, president of the local Chess Club, and the originator of several published chess problems. He was also interested in golf, and took an active part in local church work. He leaves a widow and two young sons, with whom much sympathy is expressed. A numerous company attended at his funeral, and the local V.A.D. and St. John Ambulance Brigade attended in a body, testifying to the high esteem in which they held their instructor.

DEPUTY INSPECTOR-GENERAL WALTER BOWDEN, D.S.O., R.N. (retired), died at Weymouth on November 13th, aged 60. He was the son of the late William Bowden, was educated at University College, London, and took the diplomas of M.R.C.S., L.R.C.P.Lond., and L.S.A. in 1886, and entered the navy as surgeon in 1887. He became staff surgeon in 1899, fleet surgeon on February 28th, 1903, and retired with an honorary step as D.I.G. on February 27th, 1908. After retirement he settled at Weymouth, where he held the posts of admiralty surgeon and agent, of assistant medical officer of health, and of anaesthetist to the Princess Christian Hospital. He served in the River Gambia expedition in 1894, was present at the bombardment and occupation of Gunjur, and received the African medal with a clasp and also the D.S.O.

DR. HUGH LOGAN CALDER was for many years a well known and busy practitioner in Leith. He died suddenly from heart failure on November 17th. He graduated M.B. and C.M.Edin. in 1878 and proceeded to the M.D. in 1885; in 1888 he gained (by examination) the Fellowship of the Royal Faculty of Physicians and Surgeons of Glasgow. Soon after graduation he served as house-surgeon in Burton-on-Trent Infirmary, and then he settled in Leith, acting for several years as surgeon to the hospital of that town. He was much interested in midwifery, and was a Fellow of the Edinburgh Obstetrical Society.

Universities and Colleges.

UNIVERSITY OF EDINBURGH.

AT the meeting of the Edinburgh University Court on November 17th it was reported that the gift of £10,000, from an anonymous donor to found a lectureship in orthopaedics, had been paid over, and that the scheme for the institution of the lectureship, prepared by the Faculty of Medicine and approved by the senatus, was under consideration. The court has also under consideration proposals from the Faculty of Medicine with regard to the institution of a lectureship in venereal diseases. It has been decided, in order to provide the temporary accommodation for the class of practical histology during the next summer term, to erect at once a third story on the agricultural and forestry buildings of the University in George Square. The purchase of land at Craigmillar for the extension of the University has been completed and the erection of a new chemical laboratory begun.

Dr. R. W. Johnstone has been recognized as an extra-academical lecturer in midwifery, and the classes on physical methods in the treatment of disease (Dr. Harry Rainy) and in the history of medicine (Dr. J. D. Comrie), suspended during the war, have been resumed.

UNIVERSITY OF CAMBRIDGE.

DR. H. K. ANDERSON, F.R.S., Master of Caius College, has been appointed a member of the syndicate to consider the allocation and administration of the munificent gift recently made to the University for the department of chemistry by the British Oil Companies.

At a congregation held on November 21st the degrees of M.B. and B.Ch. were conferred on H. D. McIlroy.

UNIVERSITY OF LEEDS.

AT a congregation held on November 20th the honorary degree of D.Sc. was conferred upon Lieut.-General Sir Alfred Keogh, G.C.B., G.C.V.O., C.H., late Director-General Army Medical Service, and Sir Almroth Wright, C.B., F.R.S. Sir Alfred Keogh was presented for the degree by Professor J. K. Jamieson, and Sir Almroth Wright by Sir Berkeley Moynihan.

UNIVERSITY OF LONDON.

THE following candidates have been approved at the examination indicated:

THIRD M.B., B.S.—Mary Day (*c*, *e*), J. Joffe (*b*, *d*), R. T. Jones (*a*, *c*, *e*, *University Medal*), F. Portas (*b*), A. B. K. Watkins (*a*, *d*), G. V. W. Anderson, O. D. Brownfield, M. W. B. Bulman, C. H. C. Byrne, Alix J. Churchill, S. M. Cohen, R. Creasy, Nora A. Crow, Florence M. Edwards, R. S. Foss, P. J. Freilich, J. N. Glaister, St. G. B. D. Gray, H. O. Gunewardene, C. E. Harrison, H. N. Hornibrook, S. R. Joglekar, S. W. M. Jones, V. E. Jones, V. R. Khanolkar, H. J. Levy, N. M. Lewis, R. G. Lyster, C. D. Maitland, F. N. Moos, Marie M. A. Moralt, Edith M. P. Morris, M. J. Panthaky, J. E. Pearce, G. S. B. Phillip, Dorothy P. Priestley, Mary M. Prior, W. A. Richards, J. F. Ryan, E. P. Scott, E. D. Scott, G. H. Sims, H. W. Southgate, Frances M. Spickett, R. Theron, A. D. Wall, C. J. B. Way, J. W. Wayte, W. R. White-Cooper, A. Williams-Walker, A. G. Winter.

(*a*) Distinguished in Medicine; (*b*) in Pathology; (*c*) in Forensic Medicine; (*d*) in Surgery; (*e*) in Midwifery.

The following candidates have passed in one of the two groups of subjects:

THIRD M.B., B.S.—*Group I:* D. W. J. Andrews, Mary R. Barkas, W. W. K. Brown, E. A. L. Crichlow, W. E. K. Coles, Joyce E. Craggs, E. I. Davies, Elizabeth C. Eaves, H. Ellis, T. L. Ellis, R. K. Ford, G. O. Hume, Norah D. Pinkerton, W. E. K. A. Quitmann, J. A. W. Robinson, B. M. G. Thomas. *Group II:* C. F. Beyers, Ella M. Britten, J. Brodetsky, J. R. Dingley, A. Evans, A. S. Green, C. E. E. Herington, C. L. Hewer, E. C. Hinde, O. H. Hyman, G. E. Kidman, R. H. Leigh, S. S. Lindsay, K. McFadyean, H. I. Marriner, H. E. Reburn, W. Thomas, M. J. T. Wallis, J. P. Williams.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

A QUARTERLY meeting of the Royal College of Physicians of Edinburgh was held on November 4th, when the President, Sir Robert Philip, M.D., was in the chair.

The following members were admitted to the Fellowship:

T. A. Ross and R. B. Johnston.

The following were admitted to the Membership of the College:

J. L. Boyd, C. H. Tewsley, R. C. Robertson, J. B. McDougall, and L. B. Cox.

The following new law was adopted:

4. A candidate eligible for the Membership whose work in any sphere of medicine shall be adjudged to be of high distinction may be exempted by the Council from the whole or any part of the prescribed examination.

The Morison lectures for 1920 will be delivered in March by Lieut.-Colonel Richard C. Rows, M.D.Lond.

A SERIOUS fire occurred on November 22nd in the buildings of Laval University, Montreal. According to a Reuter's dispatch, the main buildings, containing the medical department, were destroyed, and the damage is estimated at half a million dollars.

Medical News.

THE Council of Epsom College will shortly be considering applications for "France" pensions of £30 a year. Candidates must be registered medical practitioners in necessitous circumstances who are not less than 60 years of age. Forms of application can be obtained from the secretary of the College, Mr. J. Bernard Lamb, 37, Soho Square, W.1.

THE Yarrow Convalescent Home at Broadstairs, which was opened twenty-four years ago for the reception of children belonging to middle-class families of limited means, was closed during the war owing to military occupation. It was reopened in August last. Particulars can be obtained from the Secretary at the London office, 6, Holborn Viaduct, E.C.

THE biography of Sir Victor Horsley, by Mr. Stephen Paget, has now been published by Messrs. Constable and Co.; it is entitled *Sir Victor Horsley: a Study of his Life and Work*. It is illustrated with several portraits and other pictures, and there is a short prefatory note by Lady Horsley. We hope to review the work at an early date.

DR. G. F. V. LEARY of Castlederg has been appointed to the Commission of the Peace for county Tyrone.

DR. B. H. SPILSBURY has been appointed lecturer on morbid anatomy and histology to the Medical School of St. Bartholomew's Hospital.

THE National University of Ireland has conferred the degree of LL.D. (honoris causâ) upon Sir Warren Crooke-Lawless, C.B., M.D.

LOUVAIN UNIVERSITY was formally reopened on November 18th with 3,180 students.

THE annual meeting of the Royal Surgical Aid Society will be held at the Mansion House, London, on Thursday next, December 4th, at 4 p.m., under the chairmanship of the Lord Mayor, who will be supported among others by Sir George Makins, P.R.C.S.

A DISCUSSION on diverticulitis will be opened at a meeting of the Subsection of Proctology of the Royal Society of Medicine by Dr. W. Maxwell Telling of Leeds on the afternoon of January 7th. Cases, notes, and specimens are asked for; communications may be addressed to Mr. Sampson Handley, 36, Harley Street, W.1.

THE Röntgen Society is arranging a collection of prints, illustrating the employment of *x* rays, for exhibition at the house of the Royal Photographic Society from January 6th to February 7th. Further particulars will be published later.

THE Graham Legacy Committee of the University of London have, under the regulations for the administration of the Charles Graham Medical Research Fund, made their first award of the gold medal to Dr. Charles Bolton, D.Sc., F.R.C.P., F.R.S., in recognition of the original work in experimental pathology which he has conducted in the Medical School of University College Hospital.

AT their meeting on Friday, November 21st, the directors of the Edinburgh Royal Maternity and Simpson Memorial Hospital appointed John McGibbon, M.B., Ch.B., and F.R.C.P.Edin., Obstetric Physician, New Town Dispensary, to be Assistant Physician to the Hospital. There were four candidates for the vacant post.

THE annual dinner of the Bristol Medical School, which has been in abeyance during the war, will be held once more on Thursday, December 4th, at the Royal Hotel, Bristol. Mr. R. G. P. Lansdown will be the president and Sir Anthony Bowlby, K.C.B., K.C.M.G., K.C.V.O., the guest of the evening.

A JOINT meeting of the Tuberculosis Society and the Association of School Medical Officers will be held at the house of the Medical Society of London, Chandos Street, at 8 p.m., on Monday, December 1st, when Dr. Kerr will open a discussion on the various aspects of tuberculosis in relation to school life.

SIR GEORGE NEWMAN'S memorandum, *An Outline of the Practice of Preventive Medicine* (Cmd. 363), has been temporarily unobtainable, but a third edition has now been printed, and copies are available through any bookseller.

THE late Sir Hermann Weber formed a very fine collection of Greek coins; some of the best specimens have now been bought for the nation, with the help of a special Government grant, and contributions from the National Art Collections Fund, and some friends of the British Museum, including Dr. Parkes Weber and his sister.

THE British Association for the Advancement of Science, after paying printing and office expenses, devotes its surplus funds to research. For eighty years it has been able to provide a total of about £1,000 a year for the various research committees it appoints. The National Physical Laboratory grew out of the New Observatory, maintained by the British Association from 1842 to 1872, at a cost to itself of £12,000. An appeal is now made for donations to the research fund. Subscriptions may be sent to the treasurer, Professor John Perry, F.R.S., at Burlington House, London, W.

ST. ANDREW'S HOSPITAL, Dollis Hill, Cricklewood, having been relinquished by the Government, has now reverted to its original purpose—namely, a hospital for the middle classes, where patients who cannot afford the fees which are asked at nursing homes, and who do not desire to take advantage of the ordinary hospitals, can be admitted at charges within their means. The hospital is under Catholic administration (Cardinal Bourne is at its head), but is undenominational in its admission of patients.

THE Children's Jewel Fund, initiated on January 1st, 1918, to provide financial support for the establishment of welfare centres for ante-natal and post-natal care, as well as day nurseries for children whose mothers are compelled to earn their living, has now allocated £22,273 18s., in 126 grants, for the establishment of new centres or for the development of new work in connexion with existing centres—such as dental clinics, ante-natal clinics, observation wards for ailing babies, massage clinics. Only 50 applications have been refused in accordance with certain definite conditions defined by the committee. The war being over, the fund has served its purpose. Now that the importance of welfare work is generally recognized and local authorities are being urged to establish municipal centres and to develop child welfare work in its various branches, the committee has decided to concentrate its efforts in a permanent memorial and to establish a large model centre for ante-natal and post-natal care in a suitable London district. It is hoped that all who have supported the appeal during the years of war will continue to give their interest and help to this centre, which is designed to be not only a model of its kind, but also a centre of useful work. After providing for contingent expenses in connexion with this proposal, there will be a small balance to be allocated for other centres if they apply before December 1st, after which date no further applications will be entertained, and the fund, in so far as the general grants are concerned, will be closed.

THE annual dinner of the staff and past and present students of the Royal Dental Hospital of London was held at the Connaught Rooms on November 22nd, when Sir Harry Baldwin presided. In proposing the loyal toasts the chairman referred to the great interest which the King and Queen and the whole Royal Family took in the art of dentistry. The toasts having been duly honoured, the chairman proposed that of the past and present students. He said that during the war past students of the school had been rendering service in all parts of the world in the interests of the soldiers and sailors, and had helped to carry out the work of the hospital when the regular staff and students were engaged elsewhere. He congratulated the institution on opening its doors to women students. The time had come when the arrangements for the welfare of the patients and students must be amplified. Like other dental hospitals, the Royal Dental Hospital had no beds. The committee had the option of purchasing a site adjoining the hospital for its enlargement, which would enable them to provide beds, and the money to secure completion of the purchase and erection of the building was all that was necessary. It was proposed to enlarge the scope of the hospital's work so as to include treatment of injuries and diseases of the jaw. The staff would include surgeons and dental surgeons, working in collaboration, who had acquired special skill and knowledge in dealing with such injuries. The dean, Mr. W. H. Dolamore, in responding on behalf of the school, said that on the proposed site they could extend the hospital and also the school. Sir George Makins, P.R.C.S., in acknowledging the toast of the guests, recalled the fact that his father was one of the earliest teachers of the staff of the Dental Hospital.

MESSRS. WATSON AND SONS have issued an elaborate illustrated catalogue of *x*-ray and electro-medical apparatus manufactured by them at Sunic House, Parker Street, Kingsway, W.C.2. It is systematically arranged, dealing in order with, among other matters, the production of *x* rays, induction coils and transformers, electron *x*-ray tubes, electric power supplies, alternating current, alternating mercury interrupters, and power mains. A good many interesting notes and short essays are interspersed, and we observe that the firm now offers the services of a radiographer to advise in cases of mechanical difficulty or breakdown.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

QUERIES AND ANSWERS.

INCOME TAX.

"W. B. P." explains that on returning to civil life he bought a practice as from May 9th, 1919, with a year's introduction. He is entitled to half the earnings from that date. The firm has been assessed at £669. What proportion relates to himself?

*** The figure £669 presumably represents the average of the past year's profits, and is the assumed profits of the practice for the year ending April 5th, 1920. The assessment would be divisible, approximately, between the two proprietors of the practice as follows:

Former proprietor: $\frac{7}{12}$ of £669	... =	£56
Plus $\frac{1}{2}$ of ($\frac{1}{12}$ of £669)	... =	£306
		£362
"W. B. P.": $\frac{1}{2}$ of ($\frac{11}{12}$ of £669)	... ...	£307
		£669

We suggest that "W. B. P." should send the local inspector of taxes a declaration of his total income for 1919-20—including £307 as his civil earnings for the year—and request him to supply particulars showing separately the tax payable by the two persons concerned in the profits for this year.

LETTERS, NOTES, ETC.

DR. W. O. BEDDARD, whose call to the Bar was announced last week, is a member of the Middle, not the Inner, Temple.

LONDON SUPERSTITIONS.

MR. EDWARD LOVETT, honorary curator of the Folklore Section of the Imperial War Museum, gave a lecture to the London Society recently on the folklore of London. While stating that he had not found any aboriginal folklore in London such as was to be found in the provinces and many European countries, he gave some instances of superstitions, particularly with regard to the preservation of health and the cure of disease, to which we have no doubt members of the medical profession could make many additions. He mentioned in particular the practice common among women and children of wearing a string of beads, generally blue, to prevent bronchitis. There is no doubt that the custom is very common in the East End of London, but we were not aware that it was supposed to prevent bronchitis, nor that the beads were not removed in case of death. Mr. Lovett said that beads taken from cemeteries or interment areas were abundant in museums all over Europe, and were to be found also on Egyptian mummies. The East-enders, in burying their dead without removing the beads, were carrying out a custom which had been practised for 7,000 years. From an examination of the poorer kinds of London shops he found they all kept bead necklaces, generally blue, though in some localities they were yellow, and in one or two cases white. He expressed the opinion that the war had revived superstition, and mentioned that in many houses in London horseshoes covered with red cloth were hung over beds to keep the occupants from suffering from nightmare.

THE LARGE PANEL.

"STRATFORD" writes: Although my predecessor was a rough man, who swore at the patients, the people of this region insisted on getting on to his panel, even when it went beyond 4,000. As he was far the best doctor to be found, and as his whole heart and life were devoted to his patients, they got better treatment than could be obtained from inferior men with smaller panels. Why should patients be forbidden to go on the panel of such a man? They know where they can get the best treatment, and should have the right of free choice.

PARTURITION AT ADVANCED AGE.

DR. C. SMYTH (Catford) writes: Some years ago, when practising in North-East London, I delivered a woman at the age of 52 of a strong and healthy baby. There was an unusual interval since the previous confinement, but I do not recollect whether she had menstruated regularly during that time.

ELDERLY PRIMIPARA.

DR. HENRY SALOMON (Leicester) writes to say that he was recently called by a midwife to attend a primipara aged 46. A stillborn infant weighing 8 lb. was delivered with forceps; the mother is doing well.

R.A.M.C. AND STATE SERVICE.

"EXPERIENCE" writes: In answer to "G.P." (p. 550), I beg to state that I have held lucrative panel and non-panel practice, and gave up my *regular* commission last year in order to take up school work. I have found no reason to regret my choice. In general practice one gets the minimum of work done with the maximum of fatigue; in the army I only served under one O.C. who was really interested in his profession, and he promptly rose to be director-general. The absence of motor cars in school work at least spares us the gilded poverty of many a panel practitioner anxious to "keep up appearances."

EDWARD JENNER'S VERSES.

A CORRESPONDENT writes that he is interested to learn from an article on Medicine and Letters in the BRITISH MEDICAL JOURNAL of June 21st that the well known verses on the signs of rain were written by Edward Jenner in excuse for not accepting the invitation of a friend to make a country excursion. The whole poem, which extends to forty-four lines, will be found in Baron's *Life of Dr. Jenner*, vol. i, p. 20 (London, 1827). Jenner was the author also of other verses—"Address to a Robin," a description of Berkeley Fair, and several epigrams on persons and things of local interest. Extracts from the "Address to a Robin" and "Berkeley Fair" were quoted in the Jenner Centenary Number of the BRITISH MEDICAL JOURNAL, May 23rd, 1896, p. 1298.

Jenner's inspiring goddess was a *musa pedestris*, but his lyre is not untuneful. His verses, besides a sense of humour, show the power of close observation to be expected from a pupil of John Hunter. His friend, Edward Gardner, a man of cultivated literary taste, who had been a school-fellow of Chatterton, "the marvellous boy, the sleepless soul, who perished in his pride," was wont to say that Jenner in becoming a distinguished physician had lost the opportunity of gaining renown as a poet. Jenner's estimate of himself was more modest. In writing to Gardner he says, "I have thrown in a few more stanzas to 'Ladbroke's Entire'; it is my best song. I wish I could give up, or at least suspend, the little acquaintance I have made with the Muse. Every time I begin a bagatelle, I almost swear it shall be the last; and hardly steer clear of perjury, you see. But when I see that the resolves of the greatest philosophers can be set aside by the most gentle means in the world, I, who am the lowest of the order, should not repine at my lot." In the same letter he alludes to a song which he sang to the "Gallant Bowmen," probably an archery society. Neither of these effusions is reproduced by Baron. For our own part, we think Jenner is at his best in the "Address to a Robin," which is printed in Baron's second volume (p. 434, et seq.). Wordsworth spoke affectionately of "our little English robin" as "the pious bird with the scarlet breast." That worshipper of Nature might have learnt from Jenner how "the bird whom man loves best" showed his piety by cuffing his father and smacking his mother and generally behaving as a blackguard.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 37, 38, 42, 43, 44, and 45 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 39, 40, and 41.

THE following appointments of certifying factory surgeons are vacant: Batley (Yorks, West Riding), Nantwich (Cheshire).

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